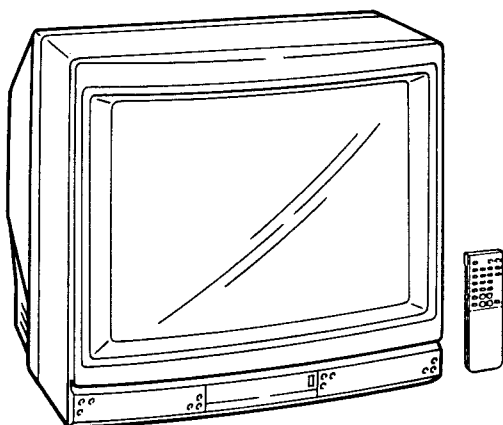


# KV-27TS20

## RM-757

## SERVICE MANUAL



*US Model*  
Chassis No. SCC-A05P-A

*Canadian Model*  
Chassis No. SCC-A50G-A

## P-3A CHASSIS

**Note:** The service manual for RM-757 has been issued separately.

### MODELS OF THE SAME SERIES

KV-27TS20	

### SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2-13 UHF: 14-69 Cable TV: 1-125
Picture tube	Microblack Trinitron tube <b>27-inch picture measured diagonally</b> 28-inch picture tube measured diagonally
Input	VIDEO INPUT (phono jacks) Video: 1 Vp-p, 75-ohms unbalanced, sync negative Audio: 500 mVrms (100% modulation) Impedance: 47 kilohms
Output	AUDIO OUTPUT (VARIABLE) (phono jacks) More than 408 mVrms at the maximum volume setting (variable) (100% modulation) Impedance: 10 kilohms
Power requirements	120 V AC, 60 Hz
Power consumption	160W (max.) 5W (in standby condition)
Dimensions	Approx. 672 x 650 x 524.5 mm (w/h/d)
Weight	49Kg
Sound output	3W x 3W (music power)

### Accessories supplied

Remote Commander RM-757  
with 2 size AA batteries  
Antenna connector

### Optional accessories

U/V mixer EAC-66  
Connecting cord VMC-810S/820S  
RK-C74/150

Design and specifications subject to change without notice.



**TRINITRON® COLOR TV**  
**SONY®**

5299


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### WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.


### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

### ATTENTION!!

AFIN D'ÉVITER TOUT RISQUE D'ÉLECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ÊTRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

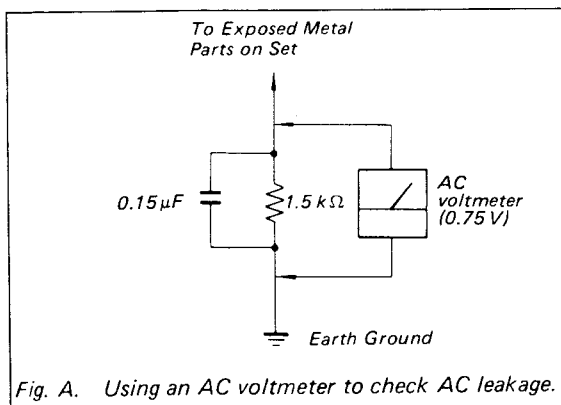
### ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

## SAFETY CHECK-OUT (US MODEL ONLY)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).  
Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



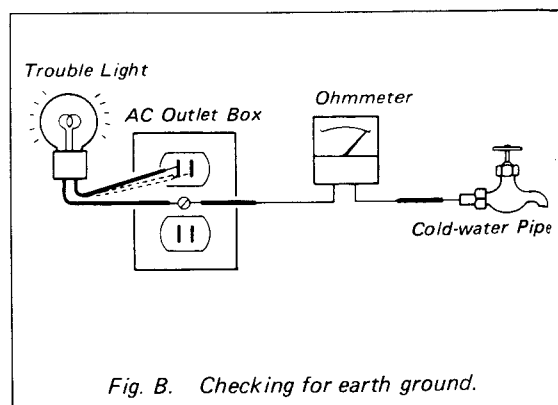
### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

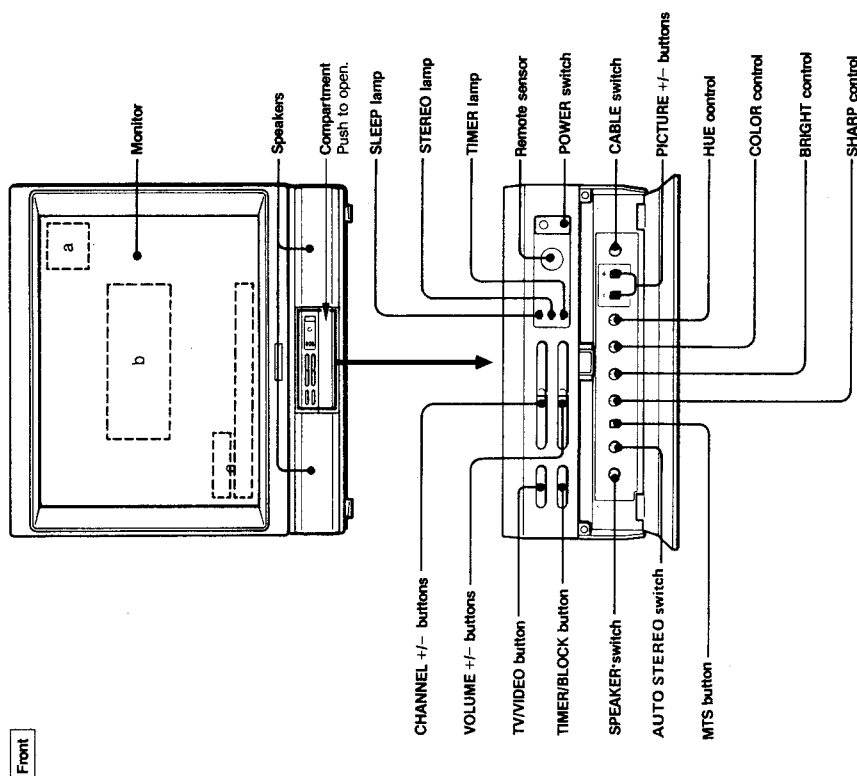
### HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)



## SECTION 1 GENERAL

### 1-1. LOCATION OF CONTROLS



### On-screen displays

- a) Channel numbers
- MTS mode indication
- "MUTING", "SLEEP" or "VIDEO" mode indication
- b) "AUTO PROGRAM", "TIMER" or "TIMER BLOCK" indication
- c) Bar display for volume or picture adjustment
- Current time for Timer/Block

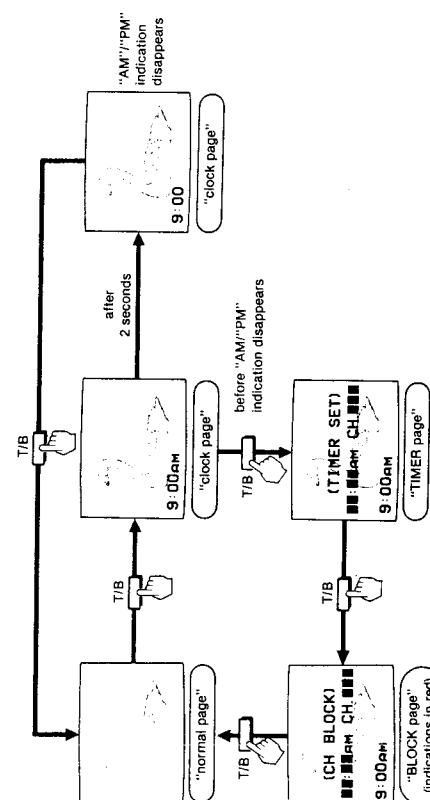
## 1-2. TIMER/BLOCK

## Available functions

<b>Internal clock</b>	Once the internal clock is set, the current time will appear on the screen. It is necessary to set the clock correctly to activate the program start <b>TIMER</b> and channel <b>BLOCK</b> .
<b>Program start <b>TIMER</b></b>	Makes a program of your choice appear on the screen automatically at the desired time.
<b>Channel <b>BLOCK</b></b>	Blocks a channel from appearing on the screen for 12 hours. Use channel <b>BLOCK</b> to prevent children from watching undesirable programs.

The buttons used for the above functions are located on the Remote Commander.

To set the internal clock, program start **TIMER** and channel **BLOCK**, you must surmount the corresponding "pages": "clock page," "TIMER page" and "BLOCK page." To change the "pages," press **TIMER/BLOCK**, **[T/B]** stands for the **TIMER/BLOCK** button.

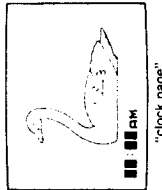


- ▶ All settings will be erased from the unit's memory if the unit is unplugged, or if a power failure occurs.
- ▶ The **TIMER** and **BLOCK** will operate only if the clock is set correctly.
- ▶ If the **TIMER** and **BLOCK** are set for overlapping times on the same channel, the blocked channel will appear on the screen at the time set on the **TIMER**.

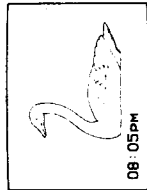
## How to Set the Internal Clock

**Example:** To set the clock to 8:05 PM

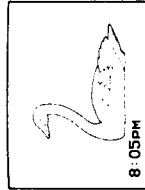
- 1 Press **TIMER/BLOCK** once to change from "normal page" to "clock page."



- 2 Press 0, 8, 0, 5, AM/PM (if necessary).



- 3 If you have performed the operation correctly, press **ENTER**. The numbers will "wink" to indicate that the clock has been set. (The 0 in front will disappear.)



If you have made a mistake, press **CLEAR** and return to step 2.

The "AM/PM" indication will disappear after 2 seconds.

To summon "TIMER page," press **TIMER/BLOCK** before the "AM/PM" indication disappears. To return to "normal page," press **TIMER/BLOCK** after the "AM/PM" indication has disappeared.

To reset the clock, summon "clock page" and press **CLEAR** before the "AM/PM" indication disappears. Then follow the steps above from step 2.

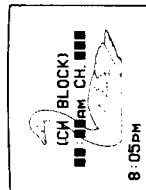
12:00 AM stands for midnight.  
12:00 PM stands for noon.

## How to Set the Channel BLOCK

**Example:** To set the clock has been set correctly before setting the channel BLOCK.

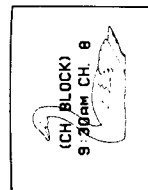
**Example:** To set the BLOCK for a program which begins at 9:30 AM on channel 8

- 1 Press **TIMER/BLOCK** three times to change from "normal page" to "BLOCK page."



"BLOCK page"  
(Indications in red)

- 2 Press 0, 9, 3, 0, **ENTER** (if necessary). Numbers will "wink" to indicate that the time has been set. Press 8, **ENTER** (if not necessary). Numbers will "wink" to indicate that the channel has been set.



The BLOCK has now been set. If you have made a mistake, press **CLEAR** and return to step 2.

At the preset time, the picture of the selected channel will be blocked from view and the sound will be muted. A red "BLOCKED" indication will appear on the screen while the channel is blocked. Normal reception will be resumed after 12 hours.

To return to normal reception while the channel is blocked, recall "BLOCK page" and press **CLEAR**.

The BLOCK setting blocks a specified channel for the same 12-hour period everyday.

To clear BLOCK setting, summon "BLOCK page" and press **CLEAR**.

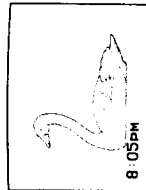
To reset, clear the setting and follow the steps above from step 2.

## How to Set the Program Start TIMER

Make sure that the clock has been set correctly before setting the program start TIMER.

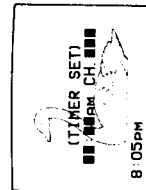
**Example:** To set the TIMER for a program which begins at 10:30 PM on channel 12

- 1 Press **TIMER/BLOCK** once to change from "normal page" to "clock page."



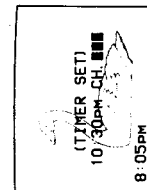
"clock page"

- 2 Press **TIMER/BLOCK** before the "AM/PM" indication disappears and summon "TIMER page."

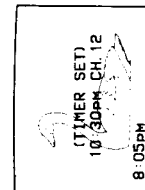


"TIMER page"

- 3 Press 1, 0, 3, 0, AM/PM, **ENTER**. Numbers will "wink" to indicate that the time has been set.



- 4 Press 1, 2, **ENTER** (if not necessary). Numbers will "wink" to indicate that the channel has been set.



The TIMER operates only once, but the time and the channel will remain in the unit's memory.

If you want to preset the same channel at the same time for a future date, press **TIMER OFF/REPEAT**. The TIMER lamp will light up to indicate that the TIMER has been reactivated.

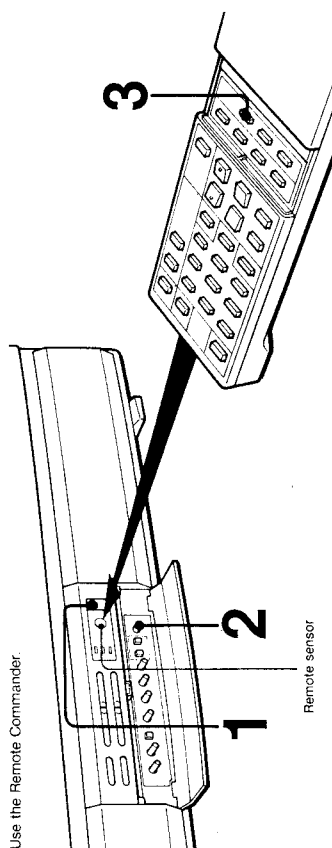
If you want to deactivate the TIMER, press **TIMER OFF/REPEAT** again so that the TIMER lamp goes out. It is not necessary to summon "TIMER page" to use the **TIMER OFF/REPEAT** button. Furthermore, this button is effective even if the TV has been turned off.

To clear the TIMER setting, summon "TIMER page" and press **CLEAR**.

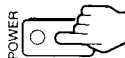
To reset, clear the setting and follow the steps from step 3.

### 1.3. PRESETTING TV CHANNELS

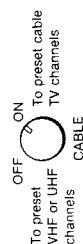
Use the Remote Commander.



#### 1 Turn the TV on.



#### 2 Set CABLE to the correct position.



#### 3 Press AUTO PROG.



"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the unit's memory.

When no more channels can be found, the programming stops and the lowest numbered channel is displayed.



Receivable channels of this TV are:

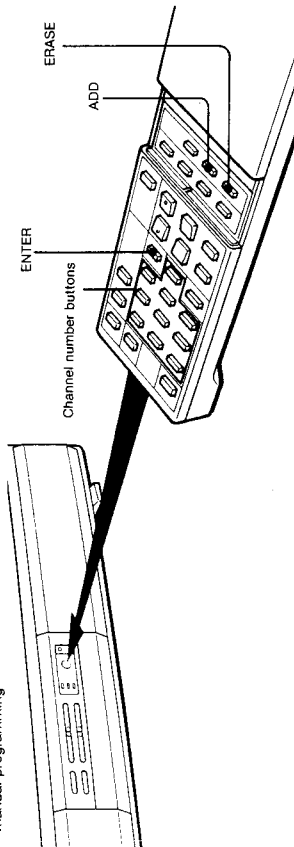
VHF: 2-13  
UHF: 14-69  
Cable: 1-125

To check preset channels  
Press CHANNEL +/-.

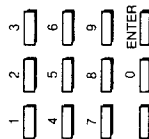
To add the channels that could not be preset with this automatic programming because their signal strength was too weak, or to erase unnecessary channels, follow the steps in "To preset only the desired channels" on the next page.

To add the channels that could not be preset with this automatic programming because their signal strength was too weak, or to erase unnecessary channels, follow the steps in "To preset only the desired channels" on the next page.

To preset only the desired channels  
--manual programming



#### 1 Press the channel number button(s) and then ENTER to select the channel to be added.



#### 2 Press ADD.



A "+" appears for a moment to the left of the on-screen channel number display. This channel has now been added to the channel scan memory.



To add other channels  
Repeat steps 1 to 2.

To erase unnecessary channels  
1 Select the channel to be erased.  
2 Press ERASE.

A "-" appears for a moment to the left of the on-screen channel number display. This channel has now been erased from the channel scan memory.



Repeat steps 1 and 2 for other channels to be erased.

When a VHF or UHF channel is erased

The cable TV channel with the same number is also erased and vice versa.

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

Cable TV channel chart\*

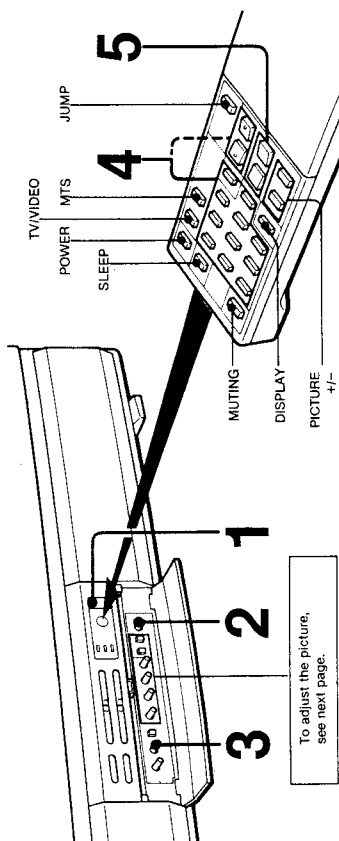
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	1	5	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corresponding CATV channel	A-6	A-7	A-8	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

Check with your local cable TV company for more complete information on the available channels.

\*The designation of the cable TV channels conforms to the EIA/NTCA recommendation.

# 1-4. WATCHING TV PROGRAMS



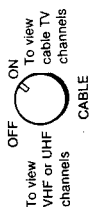
To adjust the picture

<b>SHARP</b> for more sharpness for less sharpness	<b>BRIGHT</b> for more brightness for less brightness	<b>COLOR</b> for more color intensity for less color intensity	<b>HUE</b> skin tones become purplish skin tones become greenish	<b>PICTURE</b> Press to increase picture contrast with vivid color Press to decrease picture contrast with soft color
--	---	--	--	---

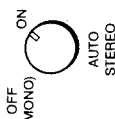
## 1 Press POWER to turn the TV on.



## 2 Set CABLE to the appropriate position.



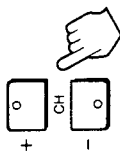
## 3 Set AUTO STEREO to ON.



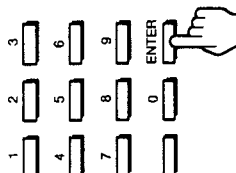
## 4

Select a channel in one of the following two ways:

To scan the preset channels in numerical sequence, press CH +/-.

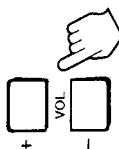


To select a channel directly, press the channel number button(s) and then ENTER. For example, to select channel 10, press 1, 0 and ENTER.



## 5

Press VOL + or - to adjust the volume.



**When receiving a Multichannel TV Sound program**  
Each time MTS is pressed, MAIN, SAP (Second Audio Program), or both are selected in sequence. The corresponding indication will appear on the screen for a while.

**If noise makes it hard to receive a very weak TV stereo program**  
Set AUTO STEREO on the TV to OFF so that the STEREO lamp goes off.  
The stereo effect will be cancelled, but reception will be stabilized and the noise will be reduced.

**To mute the sound**  
Press MUTE. The "MUTING" indication will appear on the screen. To restore the sound, press MUTE again or VOL +/-.

**To keep the channel display on the screen**  
Press DISPLAY.

**To switch quickly between 2 channels**  
Press JUMP. Each time JUMP is pressed, the channel which appeared on the screen directly before is recalled. This button enables you to keep track of two programs alternately.

**To have the TV turn off automatically after about 1 hour**  
Press SLEEP. The "SLEEP" indication will appear on the screen for a few seconds and the SLEEP lamp on the TV will remain lit until the TV is turned off.

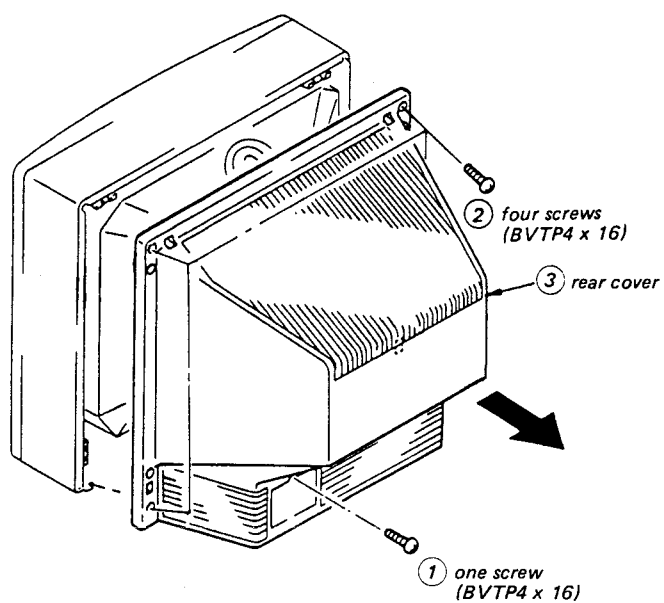
**To cancel the SLEEP timer, press SLEEP again so that the SLEEP lamp goes out, or turn off the TV.**  
**To turn off the system**  
Press POWER again.

## SECTION 2

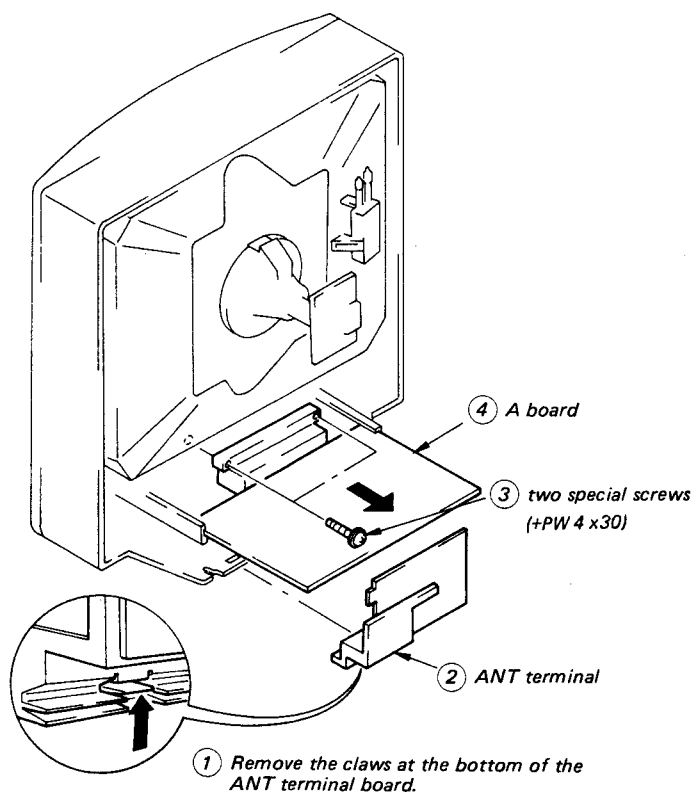
### DISASSEMBLY

#### 2-1. REAR COVER REMOVAL

*Note: In case a REAR COVER HOLDER is broken, secure the REAR COVER using a cross-head BVTP4 x 16 screw.*

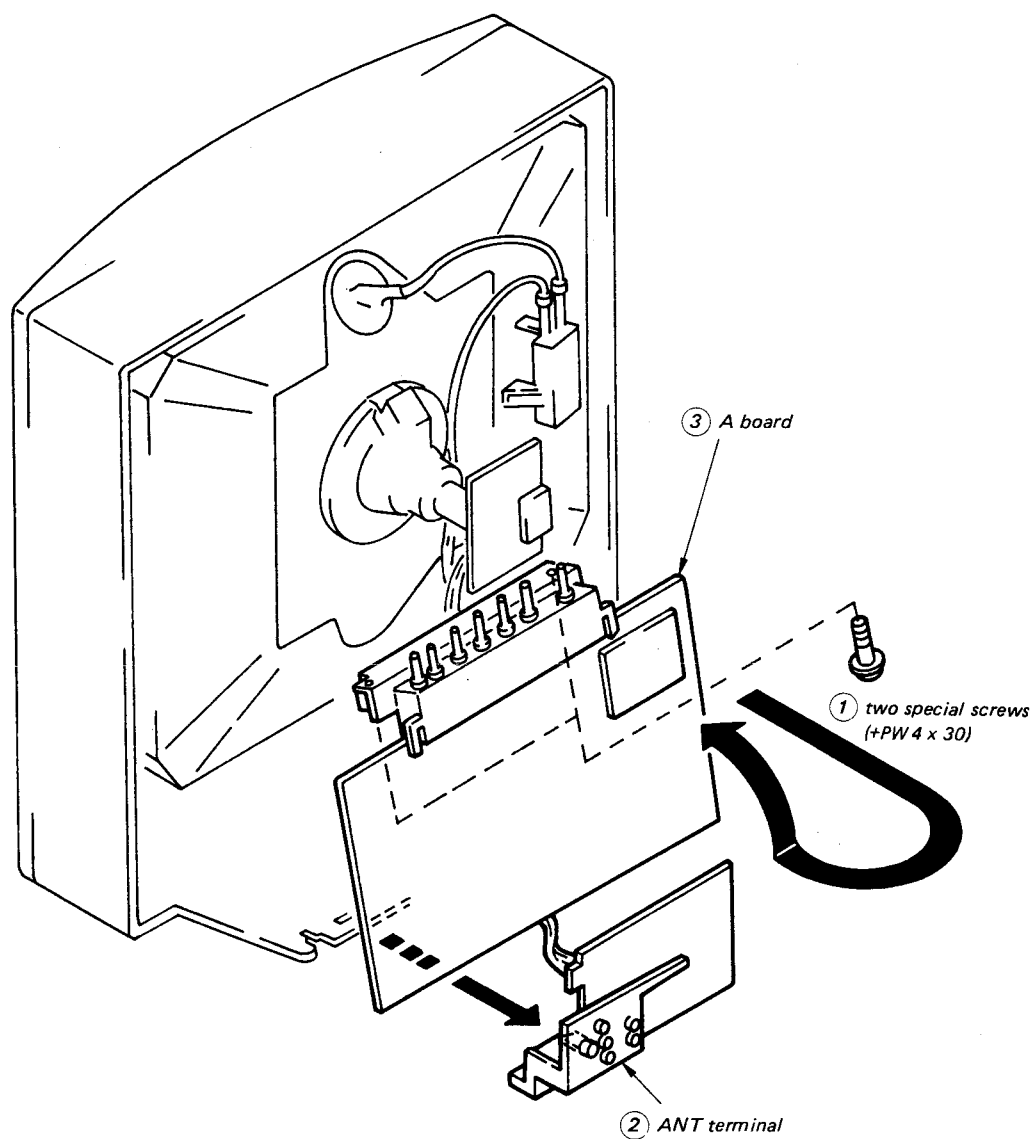


#### 2-2. A BOARD REMOVAL

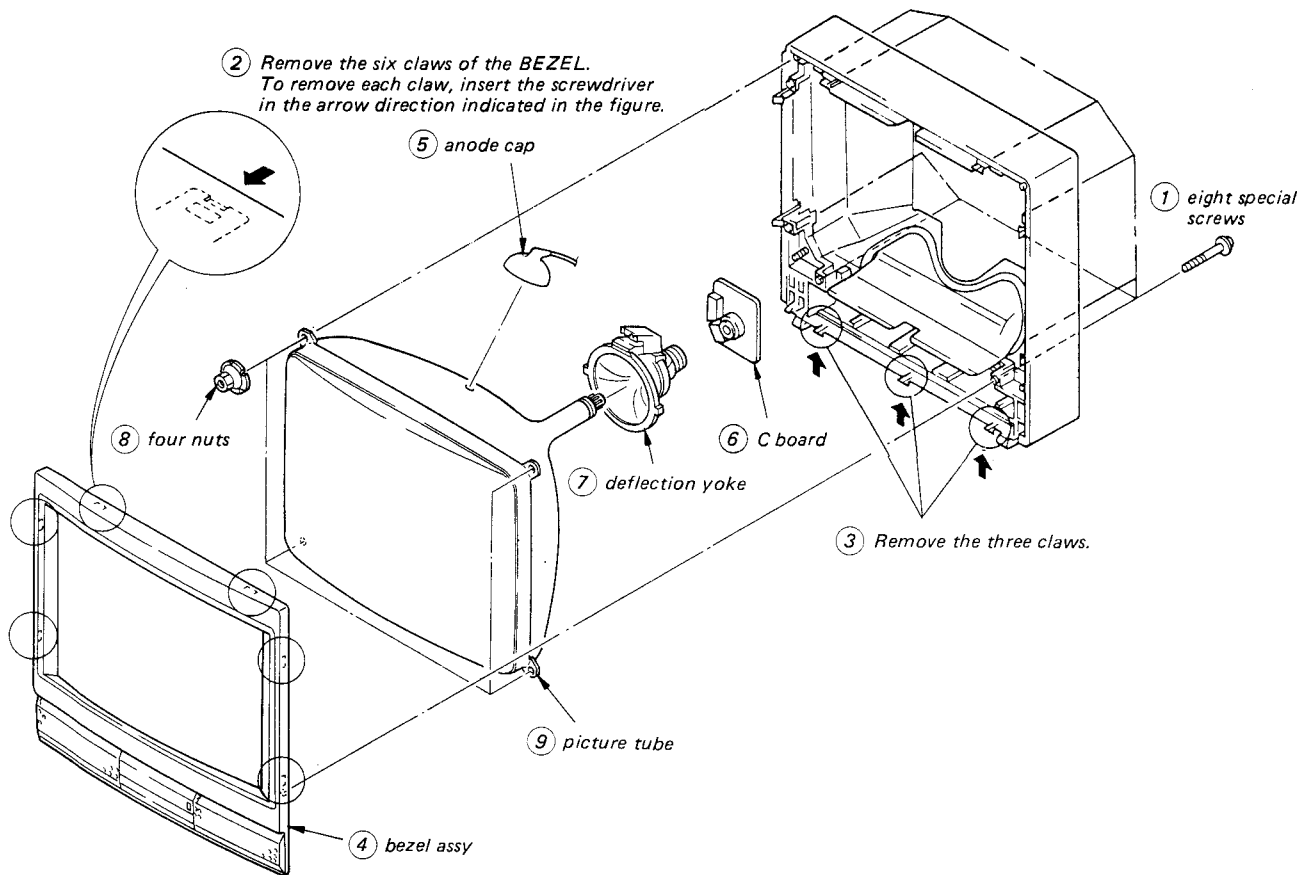




**2-3. SERVICE POSITION**

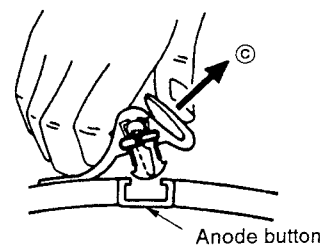
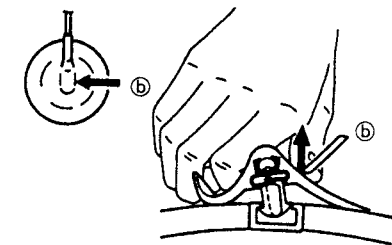
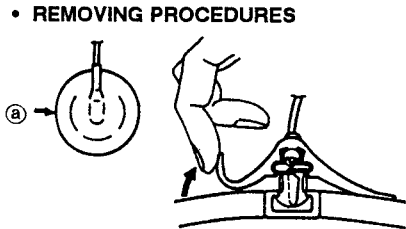


## 2-4. PICTURE TUBE REMOVAL



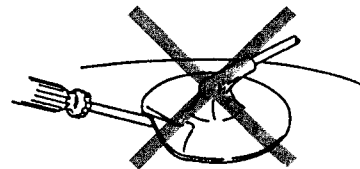
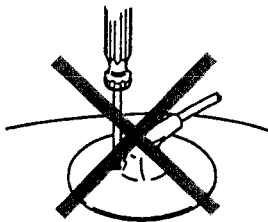
## 2-5. REMOVAL OF ANODE CAP

### • REMOVAL OF ANODE-CAP • REMOVING PROCEDURES



### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or hurt the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control . . . . . RESET

BRIGHTNESS control . . . . . center

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

**Note:** Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser

#### 3-1. BEAM LANDING

##### Preparation:

- Feed in the white pattern.
  - Before starting, degauss the entire screen.
1. Turn on set power supply and receive an all-white signal.
  2. Evenly degauss the entire screen.
  3. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Figure 3-1.
  4. Set BKG VR **R** to maximum and set **B** and **G** to minimum.
  5. Move the deflection yoke back, and adjust the purity control so that **R** is in the center and **G** and **B** are at the sides, evenly. (Figure 3-2.)
  6. Move the deflection yoke forward so that the entire screen is red.
    - \* If the deflection yoke is pushed all the way to the CRT then moved slightly back, landing adjustment is easier.
  7. Substitute **G**, then **B** for **R** in step 4 and check landing.
  8. Rotate **R**, **G** and **B** once each and check landing.
  9. When landing is not right, adjust the purity control and use magnets as shown in Figure 3-3, then repeat steps 7 and 8.
  10. When a magnet is used, be sure to perform step 2, and tighten deflection yoke mounting screw loosely.

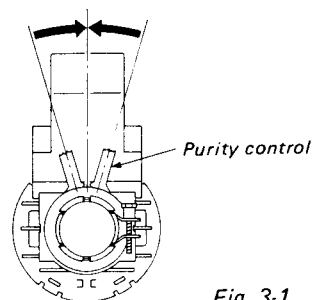


Fig. 3-1.

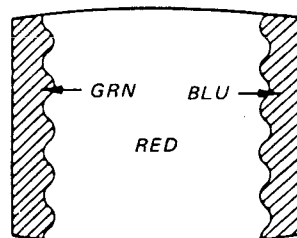


Fig. 3-2.

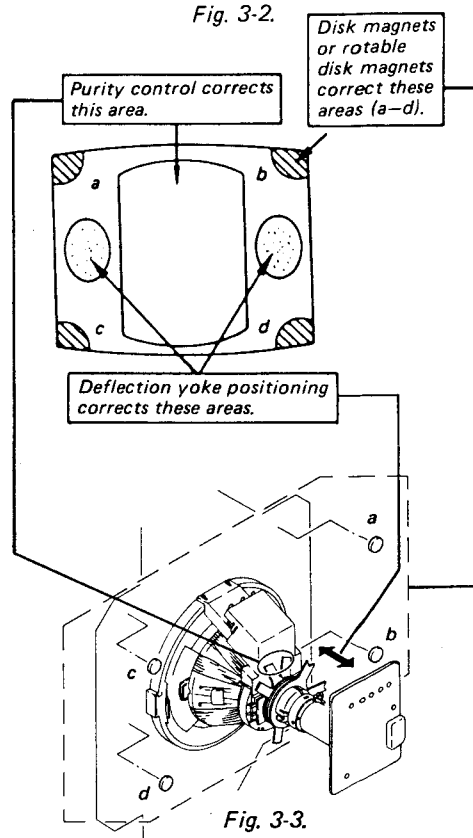
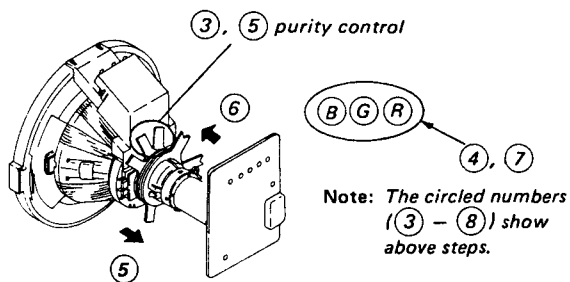


Fig. 3-3.

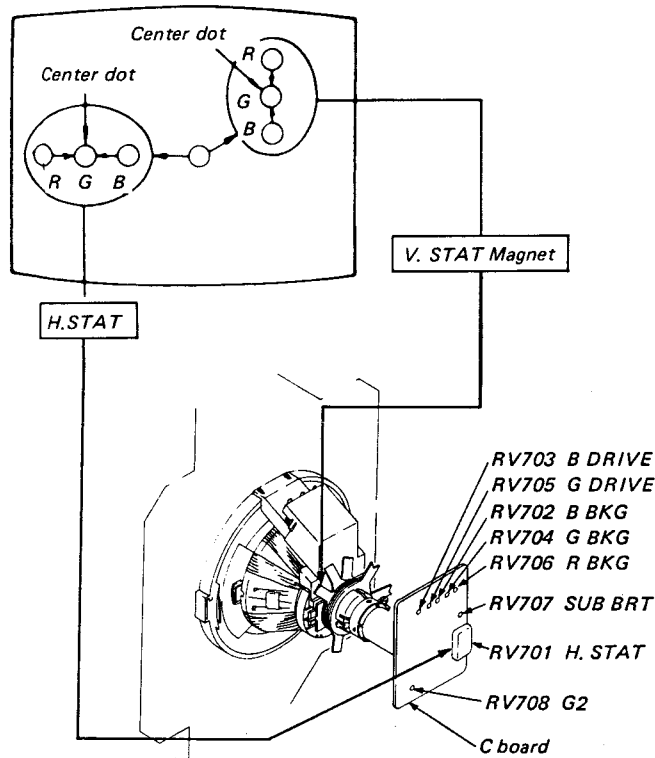


### 3.2. CONVERGENCE

#### Preparation:

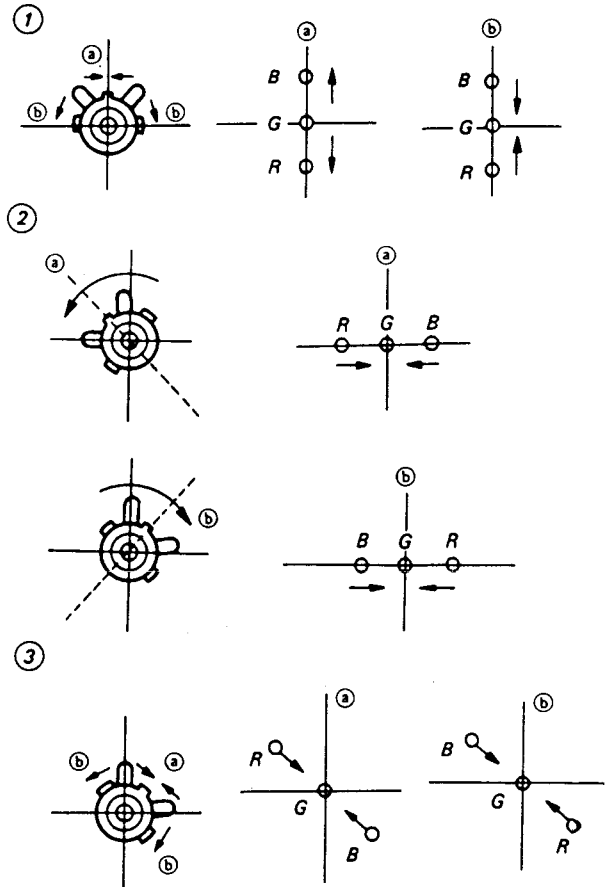
- Before starting, perform FOCUS, H. SIZE, V. SIZE and V. LIN adjustments.
- Set BRIGHTNESS control to fully counterclockwise.
- Feed in the dot pattern.

#### (1) Horizontal and Vertical Static Convergence



1. Adjust H. STAT VR to coincide red, green and blue dots on the center of screen (Horizontal movement)
  2. Adjust V. STAT magnet to coincide red, green and blue dots on the center of screen (Vertical movement)
  3. If the red, green and blue dots do not coincide on the center of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)
- Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.

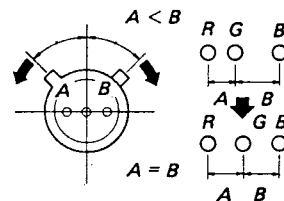
4. When the V. STAT magnet is moved in the direction of arrow (a) and (b), Red, Green and Blue dots move as shown below.



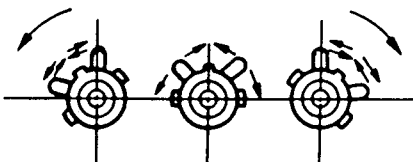
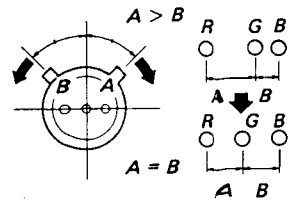
#### • HMC and VMC correction for Hexapole Magnet.

1. HMC (Horizontal, Mis. convergence) correction and motion of the Electron Beam with the Hexapole Magnet.

#### HMC correction (A)

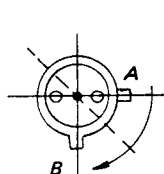


#### HMC correction (B)

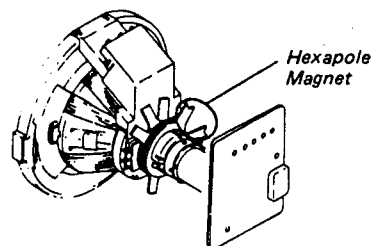
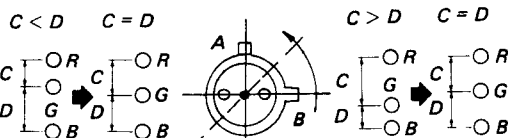


2. VMC (Vertical, Mis, convergence) correction and motion of the Electron Beam with the Hexapole Magnet.

VMC correction (A)



VMC correction (B)



## (2) Dynamic Convergence Adjustment

### Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
1. Loosen deflection yoke screw.
  2. Remove deflection yoke spacers.
  3. Move the deflection yoke for best convergence as shown in Fig. 7.
  4. Tighten the deflection yoke screw.
  5. Install the deflection yoke spacers.

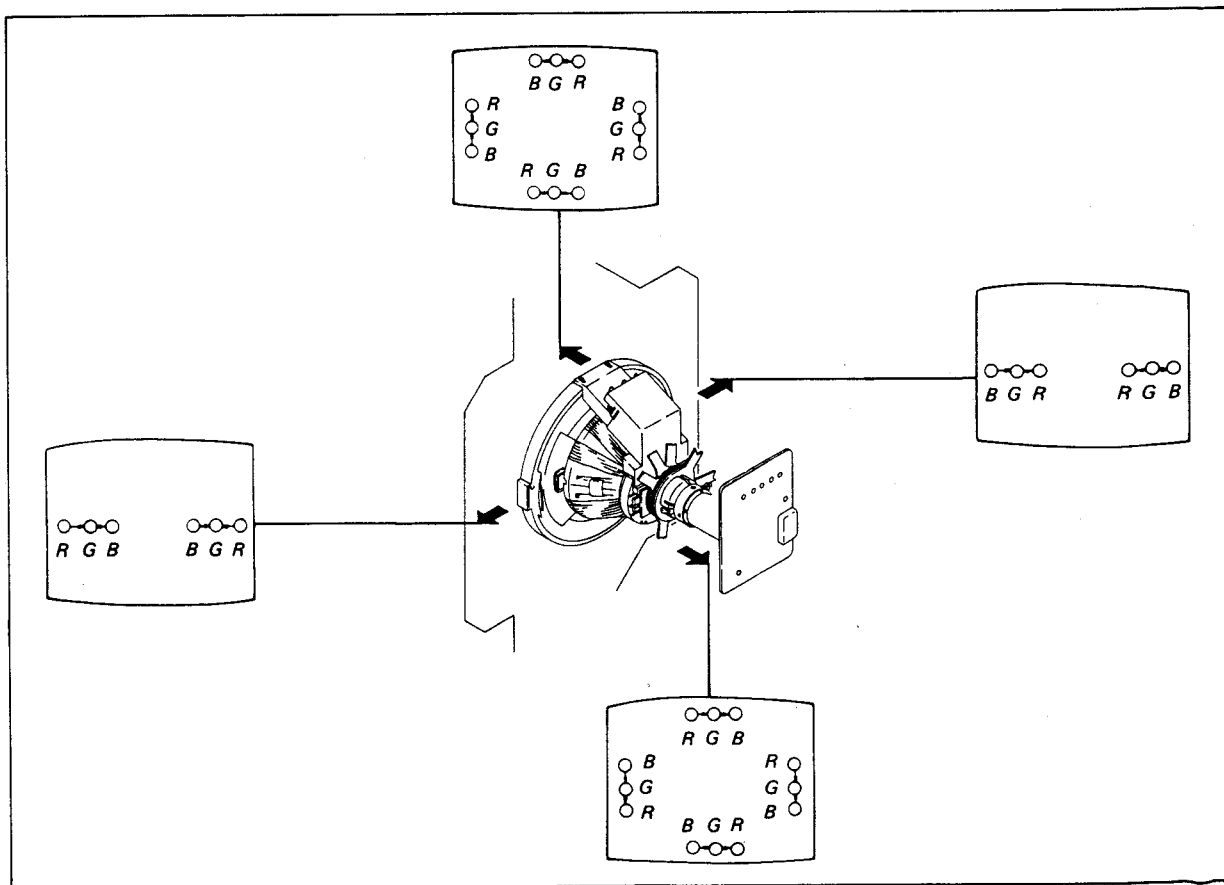
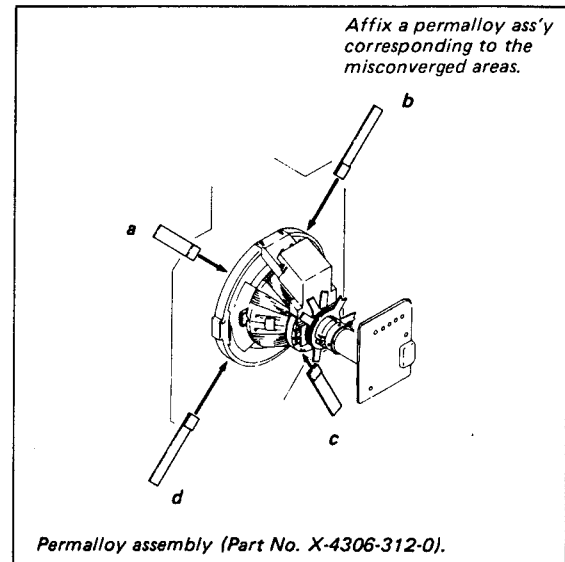
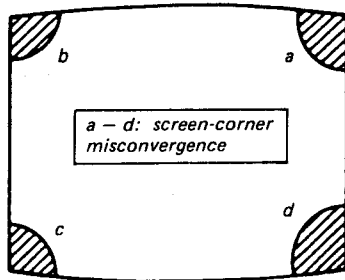


Fig. 7

### (3) Screen-corner Convergence



### 3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.

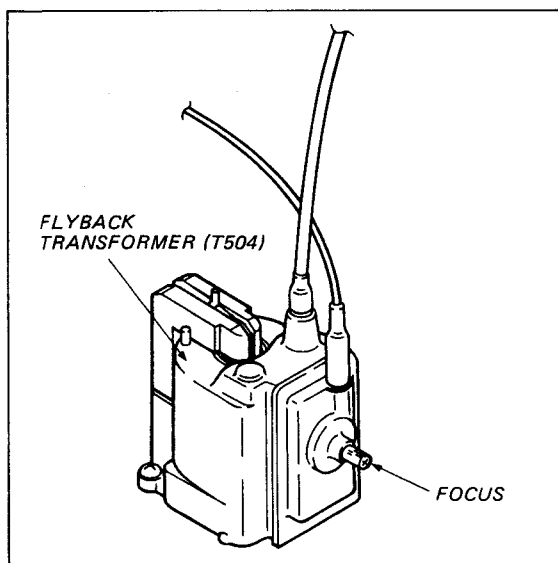


Fig. 15

### 3-4. WHITE BALANCE

Feed in the cross-hatch pattern.

1. Set the PICTURE and BRIGHT controls to minimum position (fully counterclockwise).
2. Turn B. DRIVE and G. DRIVE controls fully clockwise.
3. Set B. BKG, G. BKG and R. BKG controls to mechanical center.
4. Turn SCRN control slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning SCRN control. Do not turn a BKG control for this color.
5. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
6. Set the PICTURE and BRIGHTNESS controls to maximum position (fully clockwise).  
Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat Steps 1 through 6 several times.

**H CENT ADJUSTMENT (A-18)**

1. Receive a cross-hatch signal.
2. Set PICTURE and BRIGHT to normal.
3. Adjust H.CENT (H.CENT TAP = A-18) for best picture.

**BALANCE ADJUSTMENT (RV291)**

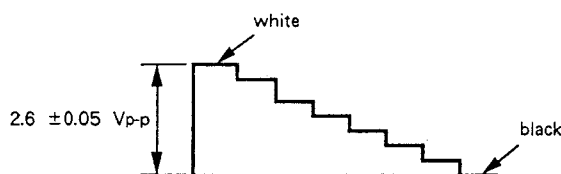
1. Receive 400 Hz (100 % modulation) sound signal.
2. Sound volume ..... 80 %
3. Connect an oscilloscope to the pin ① and pin ② of A-7 connector.
4. Adjust RV291 (BALANCE) to be the same level.

**V.CENT ADJUSTMENT (S501)**

1. Receive a cross-hatch signal.
2. Set PICTURE and BRIGHT to normal.
3. Adjust V.CENT (S501) and V.SIZE (RV507) for best picture.

**SUB CONTRAST ADJUSTMENT (RV307)**

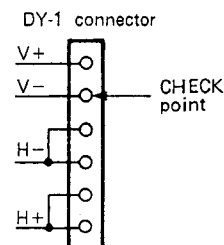
1. Receive a color-bar signal.  
 PICTURE ..... MAX  
 BRIGHT ..... CENTER  
 COLOR ..... MIN  
 SHARP ..... MIN
2. Short circuit between Base of Q354 and 9.3V Line with a jumper wire.
3. Draw A-8 connector. (Short circuit R352.)
4. Connect an oscilloscope to the pin ④ of A-8 connector (blue out).
5. Adjust RV307 (SUB CONT) so that voltage is  $2.6 \pm 0.05$  Vp-p.

**H.RREQ ADJUSTMENT (RV501)**

1. Receive an off-air signal.
2. Short circuit between pin ④ of IC301 (H IN) and pin ⑥ of IC301 (VCC 2) with a jumper wire.
3. Connect the frequency counter across Base of Q550 and ground.
4. Adjust RV501 for  $15,734 \text{ kHz} \pm 50 \text{ Hz}$  on the frequency counter.
5. Disconnect a jumper wire from IC301.

**V.FREQ ADJUSTMENT (RV502)**

1. Receive an off-air signal.
2. Short circuit between pin ④ of IC301 (V IN) and pin ⑥ of IC301 (VCC 2) with a jumper wire.
3. Connect the frequency counter across DY-1 connector (V.DY ①) and ground.
4. Adjust RV502 for  $55.0 \pm 0.3 \text{ Hz}$  on the frequency counter.
5. Disconnect a jumper wire from IC301.

**CHARACTER POSITION (T101)**

1. Receive a color-bar signal.
2. Set the PICTURE control to maximum setting and set the BRIGHT control to center click position.
3. Press the PICTURE control button until this picture level becomes maximum.
4. Adjust T101 as shown in Fig. 1.

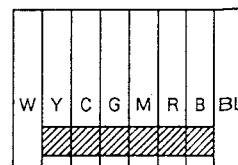


Fig. 1

**PICTURE BLANKING CONFIRMATION**

The following adjustments should always be performed when replacing the following components.

Regarding components of \*R388.

IC301, D506, R341, R344, R378, R379, R380, R382, R383, PM501

1. Connect the variable auto-transformer to AC line and turn the POWER switch ON.
2. Receive monoscope signal.
3. Set the PICTURE control in to 80 % and the BRIGHT control to center click position.
4. Connect the digital voltmeter to TP91 (135V : A-14 connector).
5. Connect the AC voltmeter to A-10 connector.
6. Slowly decrease the AC power supply voltage by the variable auto-transformer and confirm that the picture is blanked when the voltage at TP91 is more than 107.5 Vdc.

#### **V.SIZE CONFIRMATION**

The following adjustments should always be performed when replacing the following components.

Regarding components of ※R555 (V.SIZE).

DY, IC301, R514, R515, R555, R556, T504, RV507

1. Turn the POWER switch ON, and receive monoscope signal.
2. Set the PICTURE control in to 80 % and the BRIGHT control to center click position.
3. Adjust RV507 (V.SIZE) so that the V.SIZE becomes minimum, and confirm that the raster size is 29 cm or more.

#### **H.SIZE CONFIRMATION**

The following adjustments should always be performed when replacing the following components.

Regarding components of ※R551 (H.SIZE).

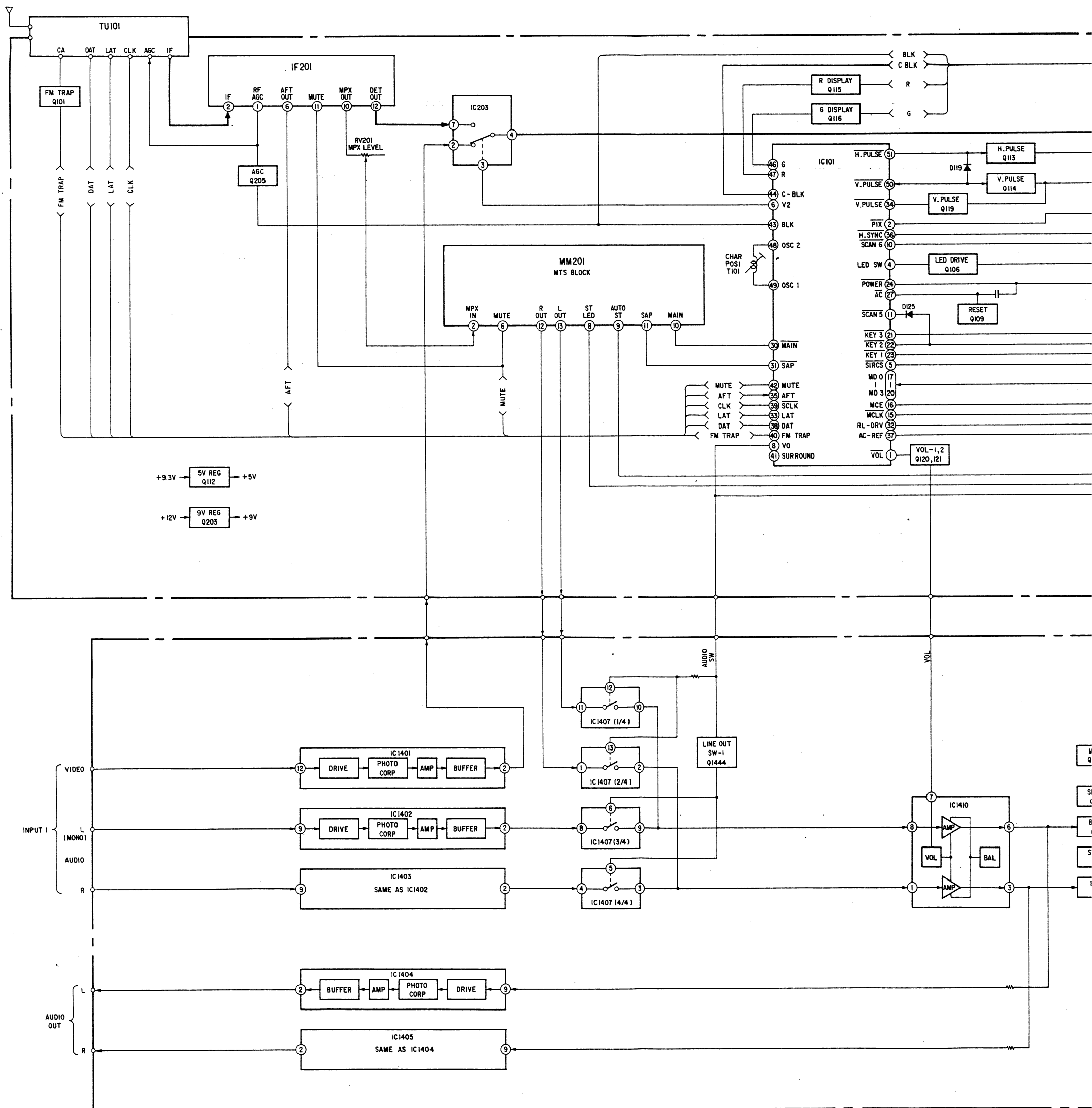
DY, C563, C565, R551, R554, R578, T504, RV506

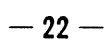
1. Turn the POWER switch ON, and receive monoscope signal.
2. Set the PICTURE control in to 80 % and the BRIGHT control to center click position.
3. Confirm that the H.SIZE at minimum should not exceed 16.4 frames by adjusting RV506 (H.SIZE).

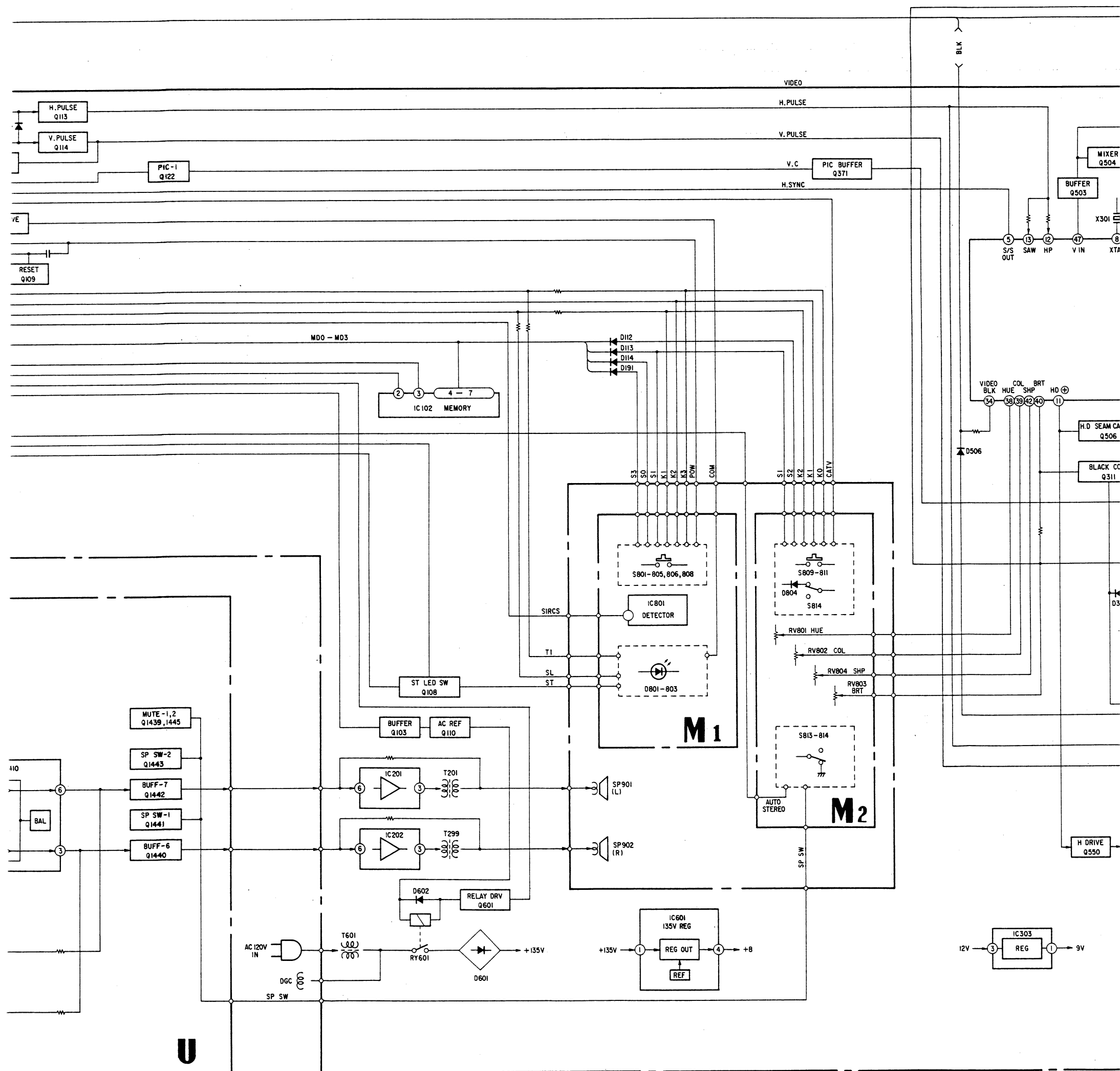


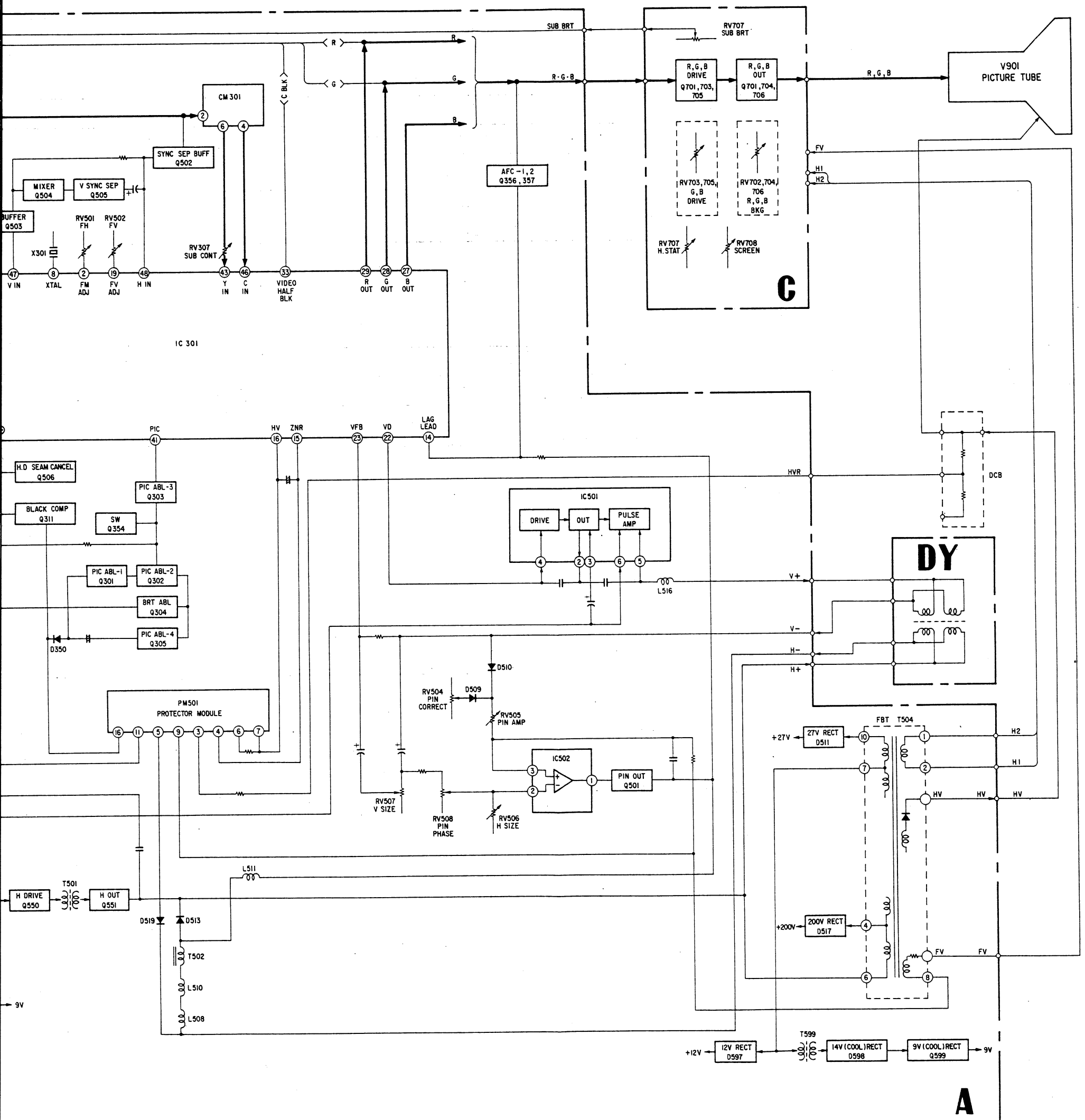
## SECTION 6 DIAGRAMS

6-1 BLOCK DIAGRAM

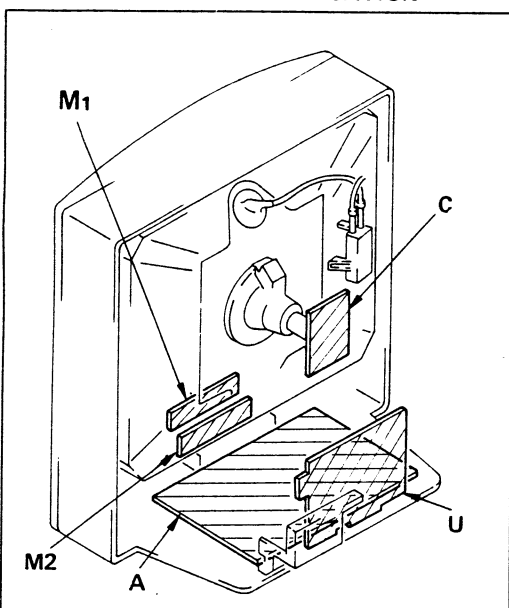








# 6-2. CIRCUIT BOARDS LOCATION



## Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics.
- All resistors are in ohms.
- $\Delta$ : internal component.
- $\square$ : nonflammable resistor.
- $\square$ : adjustment for repair.
- Indication of resistance, which does not have one for rating electrical power is as follows.

Pitch: 5 mm  
Rating electrical power: 1/4 W

## Reference information

RESISTOR	RN	METAL FILM
	RC	SOLID
	FPRD	NONFLAMMABLE CARBON
	FUSE	NONFLAMMABLE FUSIBLE
	RS	NONFLAMMABLE WIREWOUND
	RB	NONFLAMMABLE CEMENT
COIL	LF-8L	MICRO INDUCTOR
CAPACITOR	TA	TANTALUM
	PS	STYROL
	PP	POLYPROPYLENE
	PT	MYLAR
	MPS	METALIZED POLYESTER
	MPP	METALIZED POLYPROPYLENE
	ALB	BIPOLAR
	ALT	HIGH TEMPERATURE
	ALR	HIGH RIPPLE

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by  $\square$  in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by  $\square$ , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by  $\square$  and repeat the adjustment until the specified value is achieved. (Refer to R381 adjustment on Page 15, 16.) When replacing the part in below table, be sure to perform the related adjustment.

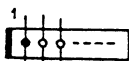
Part replaced ( $\square$ )	Adjustment ( $\square$ )
IC301, PM501, R512, R381, R382, R378, R379, R344	R381 (HOLD DOWN)

- Voltages are dc with respect to ground unless otherwise noted.
- All voltages are in V.
- Readings are taken with a 10 M $\Omega$  digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- $\text{---}$ : B+ bus.
- The hold down check point is pin 4 of A-14 connector.
- $\text{---}$ : signal path.

Note: The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

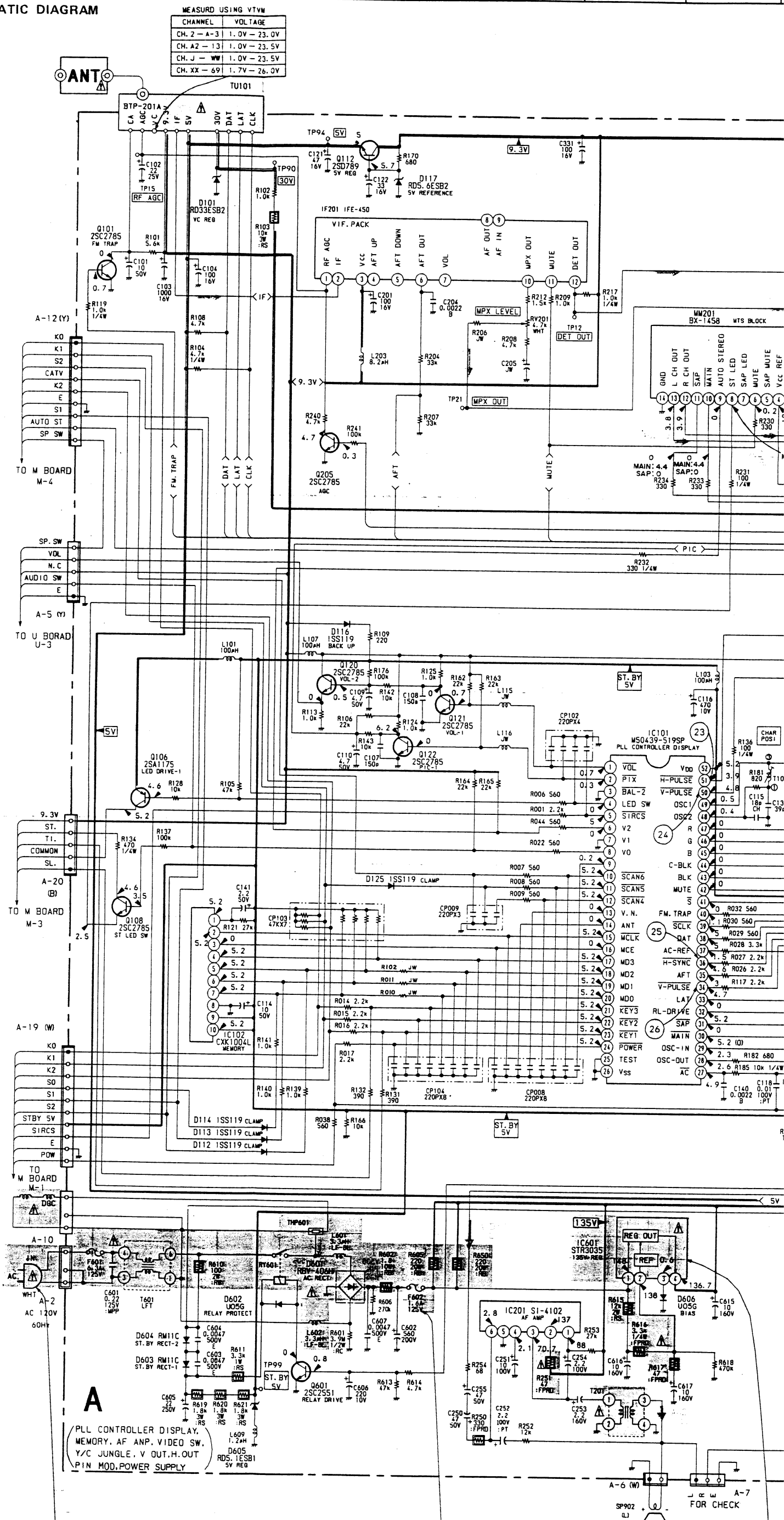
Note: Les composants identifiés par un trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Pin assignment of connectors in as follows.



wider than others

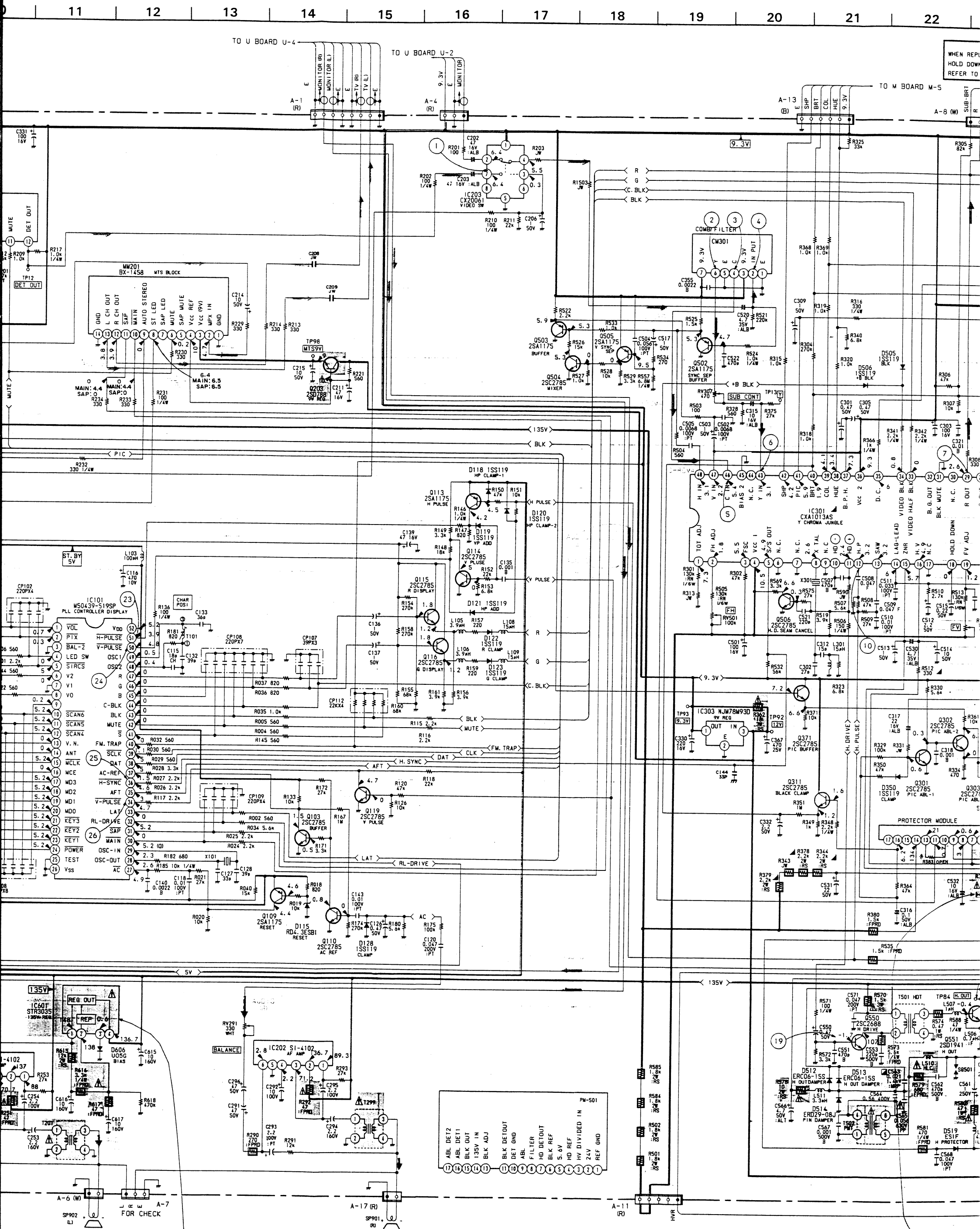
# 6-3. SCHEMATIC DIAGRAM



CAUTION  
THIS SET IS EQUIPPED WITH A POLARIZED AC POWER CORD. PLUG ONE BLADE OF THE PLUG IS WIDER THAN THE OTHER. WHEN REPLACING THE AC POWER CORD, BE SURE TO CONNECT IT WITH SPECIFIED PART NUMBER AS SHOWN IN THIS DIAGRAM.

CAUTION  
WHEN TAKING A BROKEN FUSE (F602) OFF, DISCHARGE ACROSS C602 TO AVOID SHOCK HAZARD.

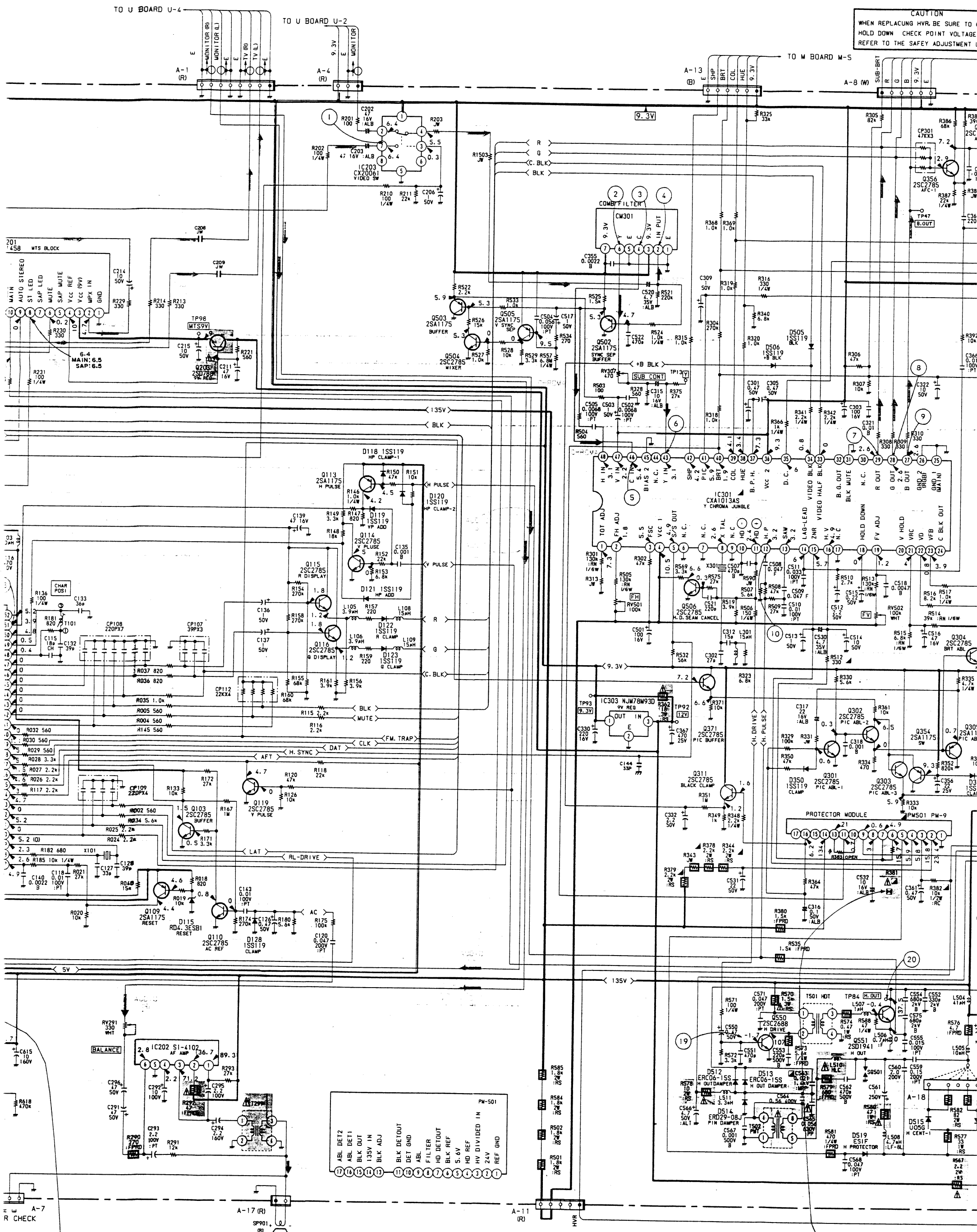
CAUTION  
WHEN REPLACING IC601, BE SURE TO POINT VOLTAGE VALUE (TP ADJUSTMENT LTEM.



WHEN REPLACING  
HOLD DOWN  
REFER TO

SEE PAGE 15-1





CAUTION  
WHEN REPLACING HVR, BE SURE TO  
HOLD DOWN CHECK POINT VOLTAGE  
REFER TO THE SAFETY ADJUSTMENT

CAUTION  
REPLACING IC601, BE SURE TO CHECK THE TEST  
VOLTAGE VALUE (TP91). REFER TO THE SAFETY.  
TWENTY LTEM.

17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
ABL DET2	ABL DET1	BLK OUT	135V IN	BLK ADJ	HD DETOUT	ABL	FILTER	HD DETOUT	BLK REF	5.6V	HD REF	HD DIVIDED IN	24V	REF GND		

SEE PAGE 15-17





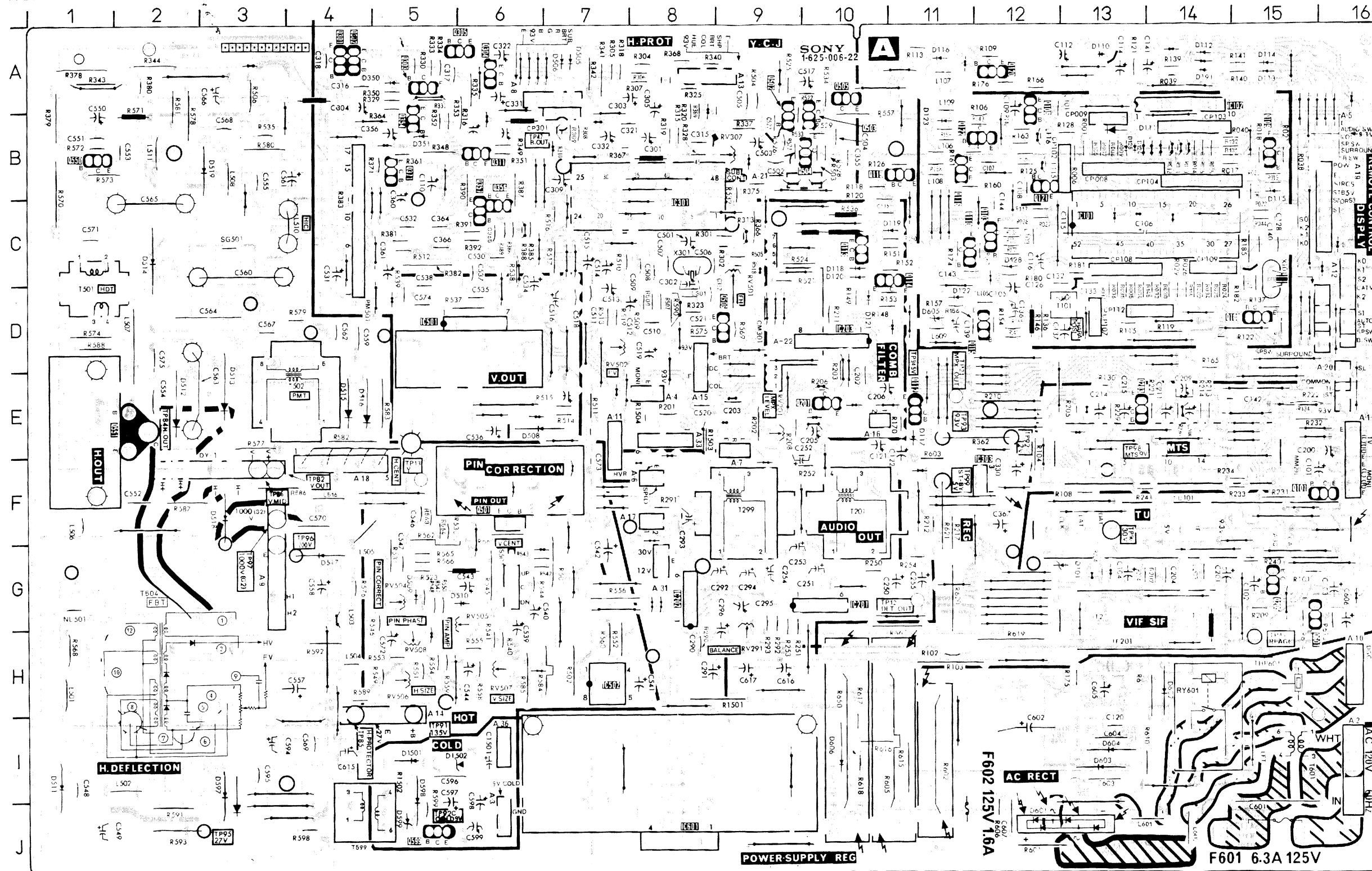
KV-27TS20  
RM-757

KV-27TS20  
RM-757

# 6-4. PRINTED WIRING BOARDS — Conductor Side —

— A Board —

**A** PLL CONTROLLER DISPLAY, MEMORY,  
AM AMP, VIDEO SW, Y/C JUNGLE,  
V OUT, PIN MDD, H OUT POWER SUPPLY



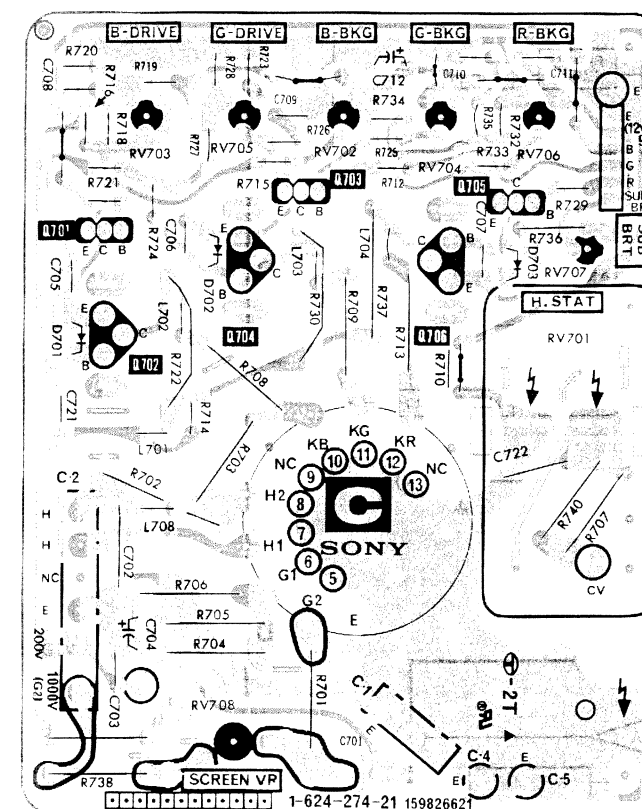
A Bo:

IC10:
IC10:
IC20:
IC20:
IC30:
IC30:
IC50:
IC50:
IC60:
TRA
Q101
Q103
Q106
Q108
Q109
Q110
Q112
Q113
Q114
Q115
Q116
Q119
Q120
Q121
Q122
Q203
Q205
Q301
Q302
Q303
Q304
Q305
Q311
Q354
Q356
Q357
Q371
Q501
Q502
Q503
Q504
Q505
Q506
Q550
Q551
Q599
Q601

**C** [R·G·B OUT]

[illegible]

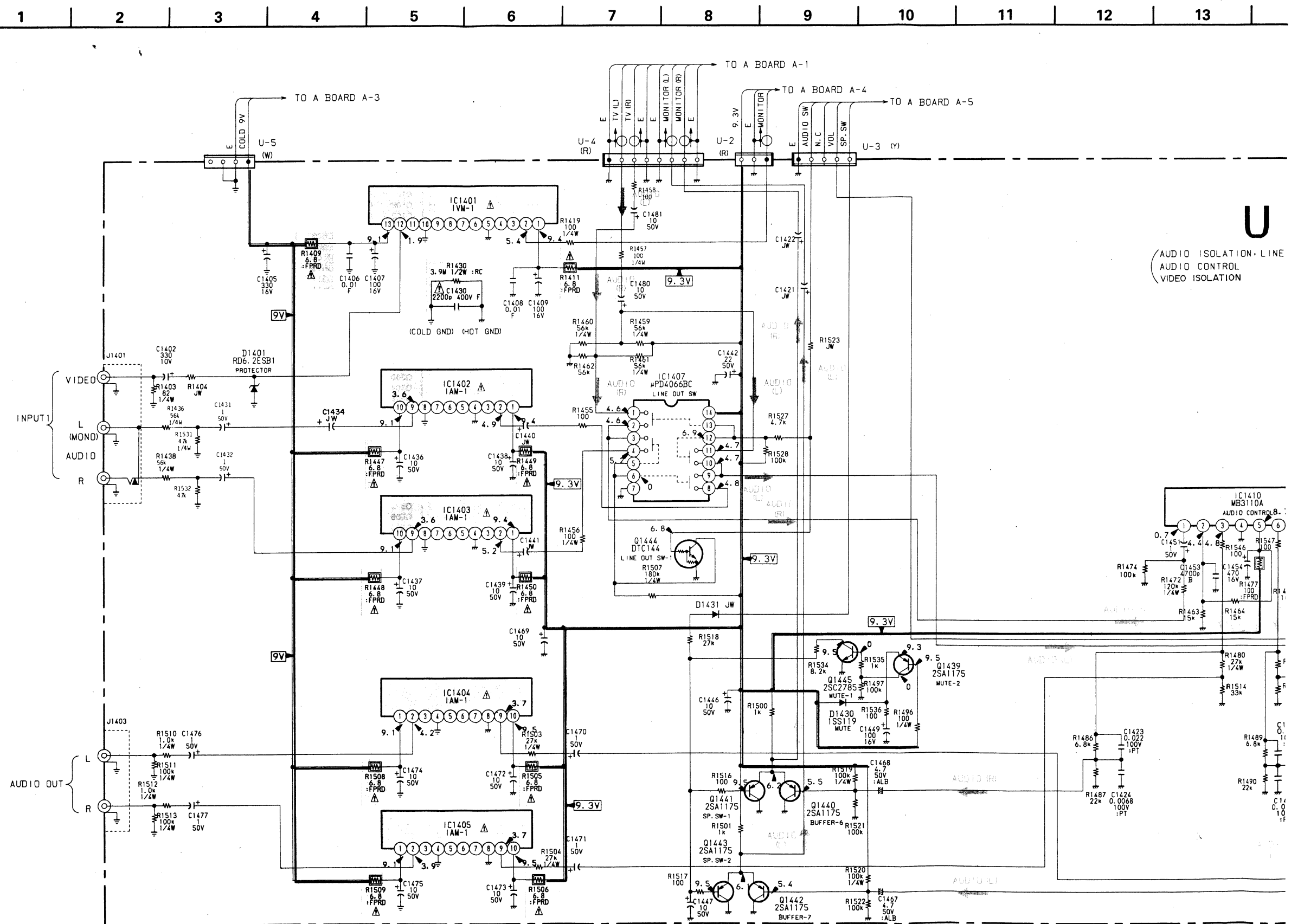
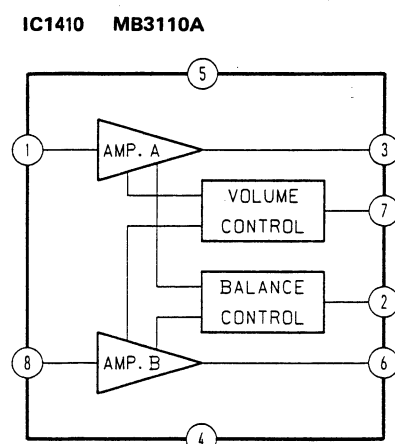
— C Board —

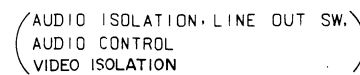


**NOTE:**

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.







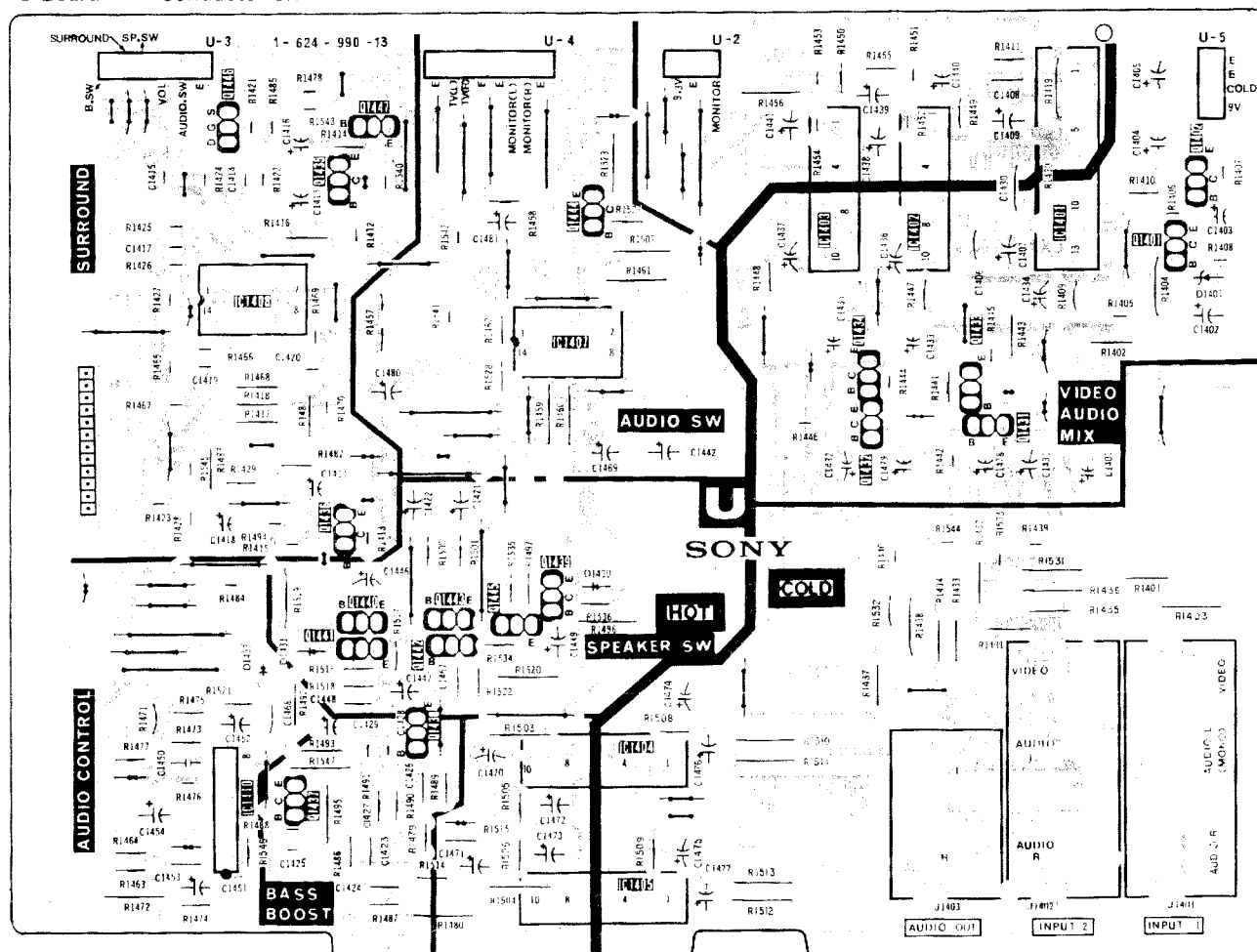
(REMOTE CONTROL  
COSTOMER



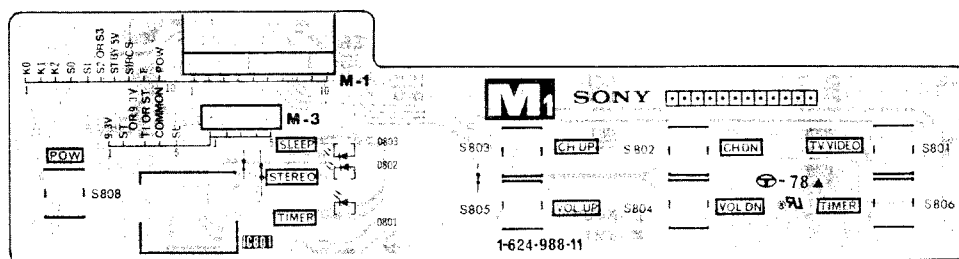
(CONTROL, CATV SW)

**M<sub>2</sub>** [CONTROL]  
CATV SW

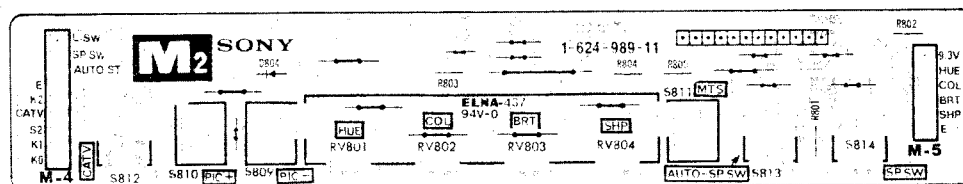
— U Board — — Conductor Side —



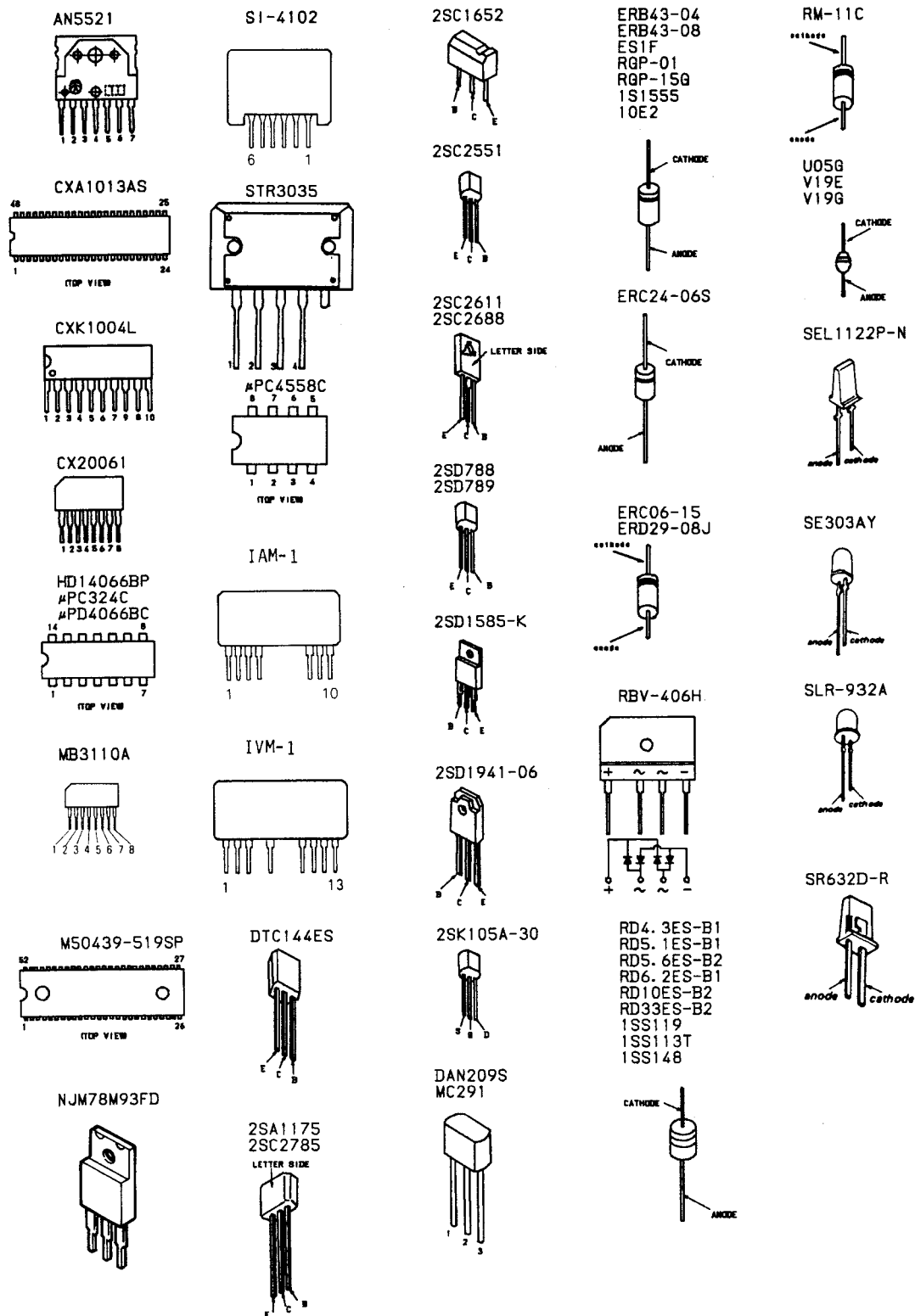
— M1 Board —



– M2 Board –



## 6-5. SEMICONDUCTORS



## SECTION 7

### EXPLODED VIEWS

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

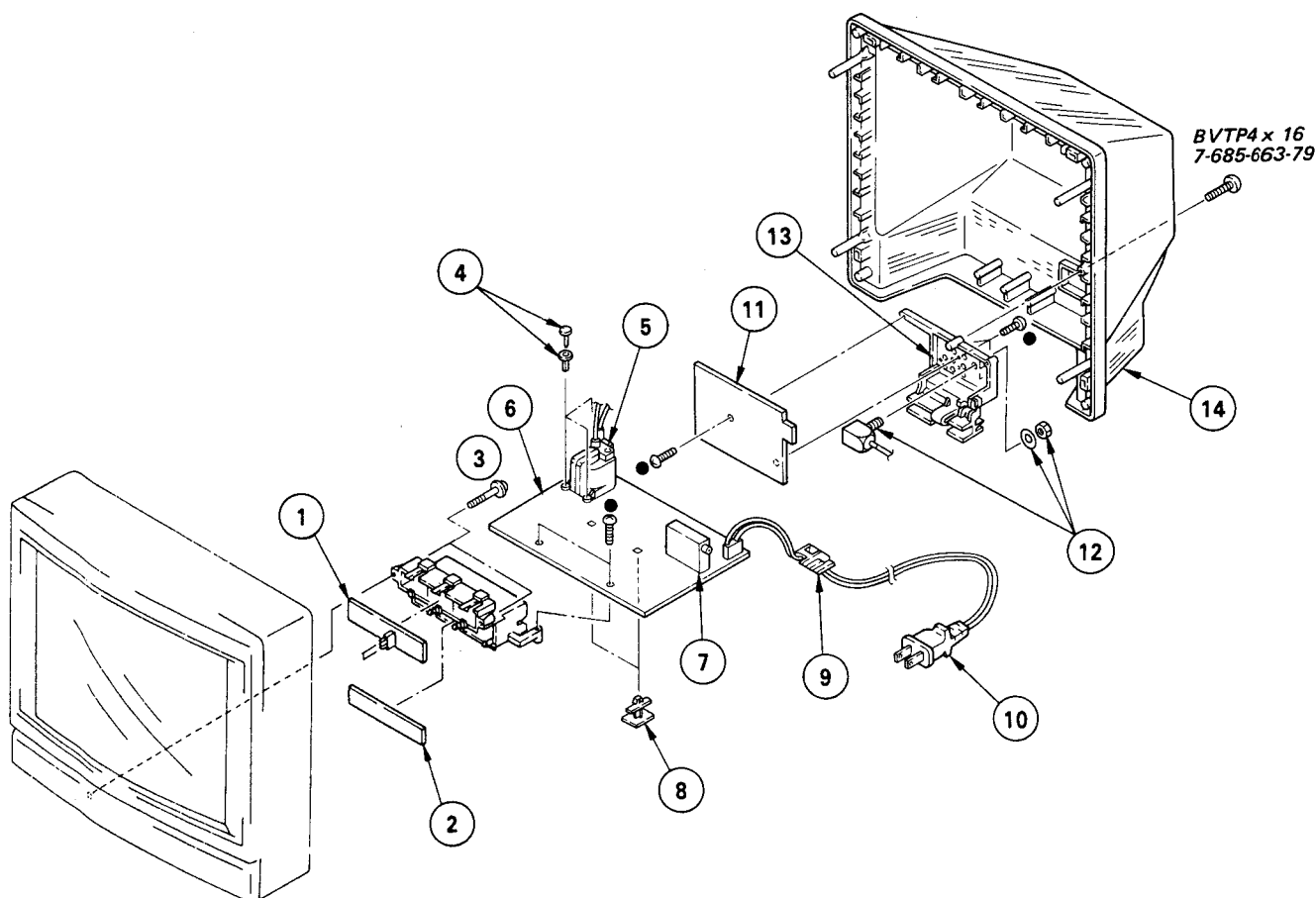
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### 7-1. REAR COVER

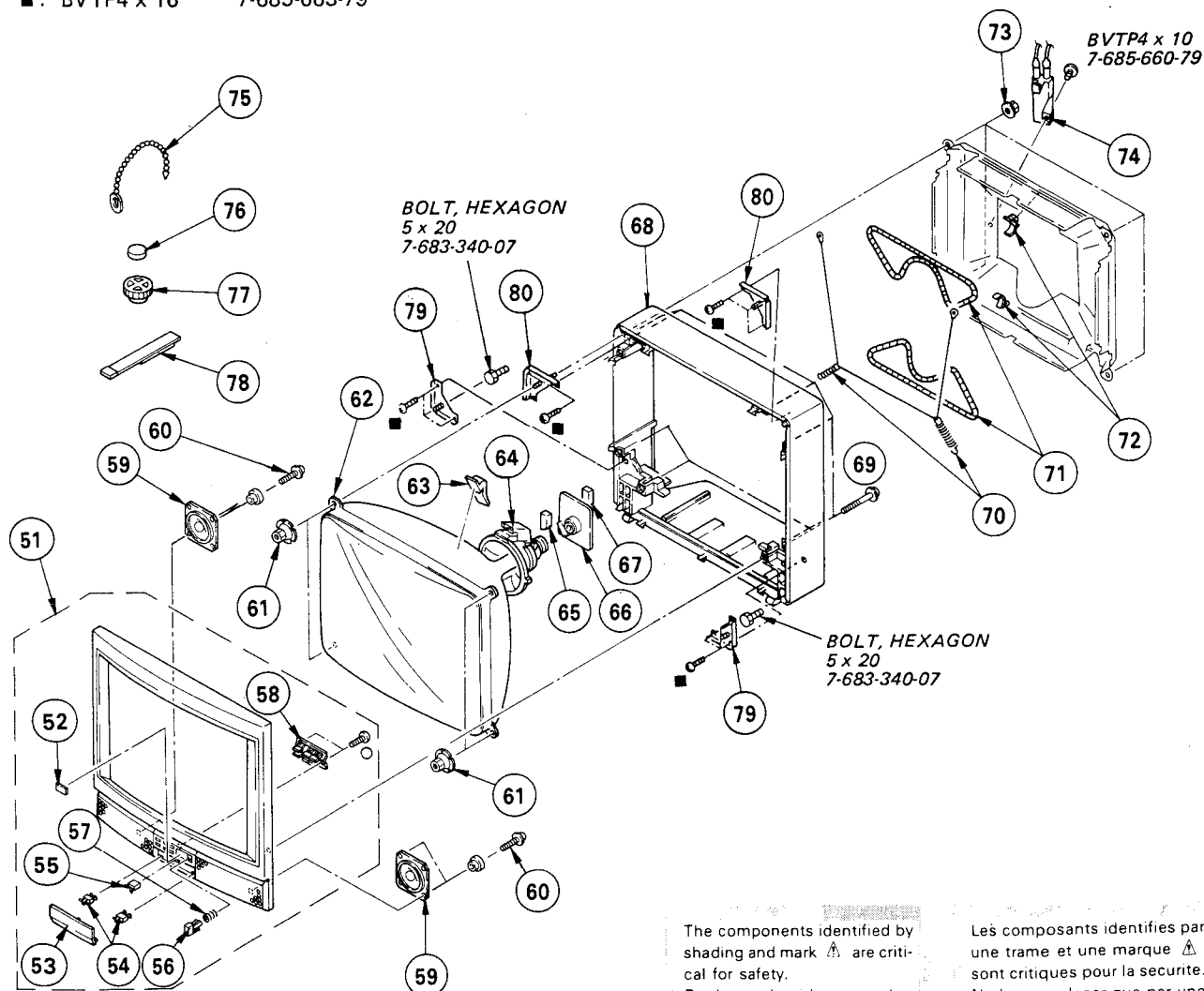
●: BVTP3 x 12      7-685-648-79



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*1-624-988-11	M1 BOARD		8	*4-376-053-01	ANCHOR, PC BOARD	
2	*1-624-989-11	M2 BOARD		9	$\Delta$ 4-388-328-01	GROMMET, AC CORD	
3	4-319-520-11	SCREW, SPECIAL (+PWX30)		10	$\Delta$ 1-559-396-11	CORD, POWER	
4	3-531-576-31	RIVET (DIA. 3), NYLON		11	*A-1394-132-A	U BOARD, COMPLETE	
5	$\Delta$ 1-439-372-13	TRANSFORMER ASSY, FLYBACK		12	$\Delta$ 1-536-591-61	BLOCK, ANTENNA (USA ONLY)	
6	*A-1296-397-A	A BOARD, COMPLETE			$\Delta$ 1-536-902-21	ANTENNA BLOCK (CND ONLY)	
7	$\Delta$ 1-463-771-11	TUNER, ET (BTP-201A)		13	4-388-413-01	TERMINAL BOARD, ANTENNA	
				14	4-388-418-01	COVER, REAR	

## 7-2. PICTURE TUBE

- : BVTP3 x 16      7-685-650-79  
■ : BVTP4 x 16      7-685-663-79




No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	X-4388-493-1	BEZEL ASSY (FOR BLACK)	52-58	65	*4-379-167-01	COVER (MAIN), CV	
	X-4388-493-2	BEZEL ASSY (FOR TRADITIONAL OAK) (USA ONLY)	52-58	66	*A-1330-838-A	C BOARD, COMPLETE	
52	4-388-403-11	PLATE, TRANSPARENT		67	*4-379-160-01	COVER (REAR LID), CV	
53	4-388-409-01	DOOR, CONTROL		68	4-388-417-01	CABINET (FOR BLACK)	
54	3-703-035-11	SHAFT, LID			4-388-417-11	CABINET (TRADITIONAL OAK) (USA ONLY)	
55	4-386-710-01	CATCHER, PUSH			4-388-417-61	CABINET (WHITE) (USA ONLY)	
56	4-388-407-01	BUTTON (B), POWER		69	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
57	3-561-888-02	SPRING, COMPRESSION		70	4-369-318-00	SPRING, TENSION	
58	4-388-411-01	BUTTON (B), MULTI		71	Δ.1-426-350-11	COIL, DEMAGNETIZATION	
59	1-503-918-11	SPEAKER		72	*4-371-629-01	STOPPER, WIRE	
60	4-388-477-01	SCREW (3X16), TAPPING		73	4-306-034-00	FLANGE NUT, (B) 5MM	
61	4-376-980-01	NUT, SPECIAL, PICTURE TUBE		74	Δ.1-230-940-31	RESISTOR ASSY, HIGH-VOLTAGE	
62	Δ.8-737-753-05	PICTURE TUBE (A68JMT50X)		75	4-308-870-00	CLIP, LEAD WIRE	
63	3-703-961-01	SPACER, DY		76	1-452-032-00	MAGNET, DISK; 10MM φ	
64	Δ.1-451-275-11	DEFLECTION YOKE (SY-158)		77	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM φ	
				78	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	
				79	*4-376-989-01	BRACKET (E), PICTURE TUBE	
				80	*4-379-197-01	BRACKET (H), PICTURE TUBE	



**A**

The components identified by shading and mark **A** are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.


- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

COILS

• MF :  $\mu F$ , PF :  $\mu\mu F$  • MMH : mH, UH :  $\mu H$

- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- \* : Selected to yield optimum performance.

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A

Les composants identifiés par  
une trame et une marque  $\Delta$   
sont critiques pour la sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

The components identified by  
shading and mark  $\Delta$  are critical  
for safety.  
Replace only with part number  
specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C501	1-126-101-11	ELECT	100MF 20% 16V	C596	1-136-558-11	FILM	0.0039MF 10% 630V
C502	1-106-363-00	MYLAR	0.0068MF 10% 100V	C597	1-124-484-11	ELECT	220MF 20% 35V
C503	1-124-499-11	ELECT	1MF 20% 50V	C598	1-124-963-11	ELECT	33MF 20% 16V
C504	1-106-385-00	MYLAR	0.056MF 10% 100V	C599	1-124-120-11	ELECT	220MF 20% 25V
C505	1-106-363-00	MYLAR	0.0068MF 10% 100V	C601 $\Delta$	1-108-745-52	MYLAR	0.22MF 20% 125V
C507	1-102-114-00	CERAMIC	470PF 10% 50V	C602	1-125-457-11	ELECT (BLOCK)	560MF 20% 200V
C508	1-101-006-00	CERAMIC	0.047MF 50V	C603	1-161-830-00	CERAMIC	0.0047MF 500V
C509	1-101-006-00	CERAMIC	0.047MF 50V	C604	1-161-830-00	CERAMIC	0.0047MF 500V
C510	1-106-367-00	MYLAR	0.01MF 10% 100V	C605	1-123-948-00	ELECT	22MF 20% 250V
C511	1-106-379-12	MYLAR	0.033MF 10% 100V	C606	1-126-176-11	ELECT	220MF 20% 10V
C512	1-124-925-11	ELECT	2.2MF 20% 50V	C607	1-161-830-00	CERAMIC	0.0047MF 500V
C513	1-124-499-11	ELECT	1MF 20% 50V	C615	1-124-046-00	ELECT	10MF 20% 160V
C514	1-123-875-11	ELECT	10MF 20% 50V	C616	1-124-046-00	ELECT	10MF 20% 160V
C515	1-124-464-11	ELECT	0.22MF 20% 50V	C617	1-124-046-00	ELECT	10MF 20% 160V
C516	1-124-477-11	ELECT	47MF 20% 16V				
C517	1-124-499-11	ELECT	1MF 20% 50V				
C518	1-102-125-00	CERAMIC	0.0047MF 10% 50V			<FILTER BLOCK>	
C520	1-124-277-11	ELECT	4.7MF 20% 35V	CM301	1-464-720-11	FILTER BLOCK, COM (CFB-1)	
C521	1-102-978-00	CERAMIC	220PF 5% 50V				
C522	1-102-824-00	CERAMIC	470PF 5% 50V			<COMPOSITION CIRCUIT BLOCK>	
C530	1-124-277-11	ELECT	4.7MF 20% 35V	CP008	1-233-147-11	COMPOSITION CIRCUIT BLOCK	
C531	1-126-233-11	ELECT	22MF 20% 50V	CP009	1-233-145-11	COMPOSITION CIRCUIT BLOCK	
C532	1-126-320-11	ELECT	10MF 20% 16V	CP102	1-233-117-11	COMPOSITION CIRCUIT BLOCK	
C534	1-124-122-11	ELECT	100MF 20% 50V	CP103	1-236-137-11	NETWORK, RES, THICK FILM	
C535	1-102-030-00	CERAMIC	330PF 10% 500V	CP104	1-233-147-11	COMPOSITION CIRCUIT BLOCK	
C536	1-124-910-11	ELECT	47MF 20% 50V	CP107	1-233-146-11	COMPOSITION CIRCUIT BLOCK	
C537	1-106-359-00	MYLAR	0.0047MF 10% 100V	CP108	1-233-118-11	COMPOSITION CIRCUIT BLOCK	
C538	1-106-220-00	MYLAR	0.1MF 10% 100V	CP109	1-233-117-11	COMPOSITION CIRCUIT BLOCK	
C539	1-123-382-00	ELECT	3.3MF 20% 50V	CP112	1-236-077-11	NETWORK, RES, THICK FILM	
C540	1-123-875-11	ELECT	10MF 20% 50V	CP301	1-236-078-11	NETWORK, RES, THICK FILM	
C541	1-124-910-11	ELECT	47MF 20% 50V			<DIODE>	
C542	1-124-517-11	ELECT	470MF 10% 50V	D101	8-719-110-78	DIODE RD33ES-B2	
C543	1-123-875-11	ELECT	10MF 20% 50V	D112	8-719-911-19	DIODE 1SS119	
C544	1-124-927-11	ELECT	4.7MF 20% 50V	D113	8-719-911-19	DIODE 1SS119	
C546	1-106-343-00	MYLAR	0.001MF 10% 100V	D114	8-719-911-19	DIODE 1SS119	
C547	1-106-347-00	MYLAR	0.0015MF 10% 100V	D115	8-719-109-74	DIODE RD4.3ES-B1	
C548	1-102-212-00	CERAMIC	820PF 10% 500V	D116	8-719-911-19	DIODE 1SS119	
C549	1-126-105-11	ELECT	1000MF 20% 35V	D117	8-719-109-89	DIODE RD5.6ES-B2	
C550	1-124-902-00	ELECT	0.47MF 20% 50V	D118	8-719-911-19	DIODE 1SS119	
C551	1-102-114-00	CERAMIC	470PF 10% 50V	D119	8-719-911-19	DIODE 1SS119	
C552	1-162-115-00	CERAMIC	330PF 10% 2KV	D120	8-719-911-19	DIODE 1SS119	
C553	1-102-244-00	CERAMIC	220PF 10% 500V	D121	8-719-911-19	DIODE 1SS119	
C554	1-162-116-00	CERAMIC	680PF 10% 2KV	D122	8-719-911-19	DIODE 1SS119	
C555	1-106-371-00	MYLAR	0.015MF 10% 100V	D123	8-719-911-19	DIODE 1SS119	
C557	1-124-494-00	ELECT	33MF 160V	D125	8-719-911-19	DIODE 1SS119	
C558	1-123-947-00	ELECT	10MF 20% 250V	D128	8-719-911-19	DIODE 1SS119	
C559	1-106-395-00	MYLAR	0.15MF 10% 200V	D350	8-719-911-19	DIODE 1SS119	
C560	1-136-113-00	FILM	2MF 5% 200V	D351	8-719-911-19	DIODE 1SS119	
C561	1-124-634-11	ELECT	1MF 20% 250V	D505	8-719-911-19	DIODE 1SS119	
C562	1-102-228-00	CERAMIC	470PF 10% 500V	D506	8-719-911-19	DIODE 1SS119	
C563 $\Delta$	1-136-732-11	FILM	0.021MF 3% 1.4KV	D508	8-719-200-02	DIODE 10E2	
C564	1-136-124-00	FILM	0.56MF 5% 400V	D509	8-719-911-19	DIODE 1SS119	
C565 $\Delta$	1-136-316-51	FILM	0.056MF 5% 630V	D510	8-719-911-19	DIODE 1SS119	
C566	1-124-045-00	ELECT	4.7MF 20% 50V	D511	8-719-971-20	DIODE ERC38-06	
C567	1-162-318-11	CERAMIC	0.001MF 10% 500V	D512	8-719-945-80	DIODE ERC06-15S	
C568	1-106-383-00	MYLAR	0.047MF 10% 100V	D513	8-719-945-80	DIODE ERC06-15S	
C569	1-106-383-00	MYLAR	0.047MF 10% 200V	D514	8-719-900-26	DIODE ERD29-08J	
C570	1-162-114-00	CERAMIC	0.0047MF 2KV	D515	8-719-200-02	DIODE 10E2	
C571	1-106-383-00	MYLAR	0.047MF 10% 200V	D516	8-719-200-02	DIODE 10E2	
C572	1-123-875-11	ELECT	10MF 20% 50V	D517	8-719-300-33	DIODE RU-3AM	
C574	1-106-220-00	MYLAR	0.1MF 10% 100V	D518	8-719-300-65	DIODE ES1F	
C575	1-162-116-00	CERAMIC	680PF 10% 2KV				
C594	1-124-557-11	ELECT	1000MF 20% 25V				
C595	1-102-212-00	CERAMIC	820PF 10% 500V				

A

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Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D519	8-719-300-65	DIODE ES1F		NL501	1-519-108-99	LAMP, NEON	
D597	8-719-901-58	DIODE RGP15J				<MODULE>	
D598	8-719-300-70	DIODE RH-1C		PM501	1-235-963-11	PROTECTOR MODULE (PM-9)	
D599	8-719-110-17	DIODE RD10ES-B2				<TRANSISTOR>	
D601 $\Delta$	8-719-305-07	DIODE RBV-406H		Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D602	8-719-200-02	DIODE 10E2		Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D603	8-719-304-63	DIODE RM11C		Q106	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D604	8-719-304-63	DIODE RM11C		Q108	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D605	8-719-109-84	DIODE RD5.1ES-B1		Q109	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D606	8-719-200-02	DIODE 10E2		Q110	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<FUSE>		Q112	8-729-378-92	TRANSISTOR 2SD789-4	
F601 $\Delta$	1-532-509-11	FUSE, GLASS TUBE 6.3A/125V		Q113	8-729-119-76	TRANSISTOR 2SA1175-HFE	
	1-533-190-11	CLIP, FUSE; F601		Q114	8-729-119-78	TRANSISTOR 2SC2785-HFE	
F602 $\Delta$	1-532-742-11	FUSE, GLASS TUBE 1.6A/125V		Q115	8-729-119-78	TRANSISTOR 2SC2785-HFE	
	*1-533-189-11	HOLDER, FUSE		Q116	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<IC>		Q119	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC101	8-759-605-39	IC M50439-519SP		Q120	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC102	8-759-803-24	IC CXK1004L		Q121	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC201	8-749-900-15	IC SI-4102		Q122	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC202	8-749-900-15	IC SI-4102		Q203 $\Delta$	8-729-378-83	TRANSISTOR 2SD788-4	
IC203	8-752-006-12	IC CX20061		Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC301	8-752-031-72	IC CXA1013AS		Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC303	8-759-982-37	IC RC78M93FD		Q302	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC501	8-759-402-35	IC AN5521		Q303	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC502	8-759-945-58	IC RC4558P		Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC601 $\Delta$	8-749-930-35	IC STR3035		Q305	8-729-119-76	TRANSISTOR 2SA1175-HFE	
	4-369-267-01	SPACER, MICA; IC601		Q311	8-729-119-78	TRANSISTOR 2SC2785-HFE	
MM201	8-741-156-80	IC SBX1568-51		Q354	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		<IF BLOCK>		Q356	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IF201	1-464-755-11	IF BLOCK (IFE-450)		Q357	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<COIL>		Q371	8-729-119-78	TRANSISTOR 2SC2785-HFE	
L101	1-410-482-31	INDUCTOR 100UH		Q501	8-729-107-26	TRANSISTOR 2SD1585-K	
L103	1-410-482-31	INDUCTOR 100UH		Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
L105	1-408-404-00	INDUCTOR 3.9UH		Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE	
L106	1-408-404-00	INDUCTOR 3.9UH		Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
L107	1-410-482-31	INDUCTOR 100UH		Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
L108	1-408-411-00	INDUCTOR 15UH		Q506	8-729-119-78	TRANSISTOR 2SC2785-HFE	
L109	1-408-411-00	INDUCTOR 15UH		Q550	8-729-119-80	TRANSISTOR 2SC2688-LK	
L203	1-408-408-00	INDUCTOR 8.2UH		Q551	8-729-304-50	TRANSISTOR 2SD1941-06	
L301	1-408-411-00	INDUCTOR 15UH			*4-378-214-01	HOLDER, TR; Q551	
L501	1-408-226-00	INDUCTOR 82UH		Q599	8-729-378-92	TRANSISTOR 2SD789-4	
L502	1-408-938-00	INDUCTOR 22UH		Q601	8-729-255-12	TRANSISTOR 2SC2551	
L504	1-459-313-00	COIL WITH CORE (HWC)				<RESISTOR>	
L505	1-459-104-00	COIL, DUST CORE		R001	1-249-421-11	CARBON 2.2K 5% 1/4W	
L506	1-407-365-00	COIL, CHOKE		R002	1-249-414-11	CARBON 560 5% 1/4W	
L507	1-408-349-00	COIL, CHOKE		R004	1-249-414-11	CARBON 560 5% 1/4W	
L508	1-408-239-00	INDUCTOR 4.7MMH		R005	1-249-414-11	CARBON 560 5% 1/4W	
L510 $\Delta$	1-459-224-13	HLC		R006	1-249-414-11	CARBON 560 5% 1/4W	
L511	1-459-075-00	COIL, DYNAMIC CONVERSION CHOKE		R007	1-249-414-11	CARBON 560 5% 1/4W	
L516	1-408-225-00	INDUCTOR 3.3UH		R008	1-249-414-11	CARBON 560 5% 1/4W	
L601 $\Delta$	1-408-225-21	INDUCTOR 3.3UH		R009	1-249-414-11	CARBON 560 5% 1/4W	
L602 $\Delta$	1-408-225-21	INDUCTOR 3.3UH		R014	1-249-421-11	CARBON 2.2K 5% 1/4W	
L609	1-410-459-11	INDUCTOR 1.2UH		R015	1-249-421-11	CARBON 2.2K 5% 1/4W	
		<NEON LAMP>		R016	1-249-421-11	CARBON 2.2K 5% 1/4W	
				R017	1-249-421-11	CARBON 2.2K 5% 1/4W	
				R018	1-249-416-11	CARBON 820 5% 1/4W	
				R019	1-249-429-11	CARBON 10K 5% 1/4W	
				R020	1-249-429-11	CARBON 10K 5% 1/4W	

A

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une trame et une marque  $\Delta$   
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The components identified by  
shading and mark  $\Delta$  are critical  
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Replace only with part number  
specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R021	1-249-434-11	CARBON	27K 5% 1/4W	R161	1-249-424-11	CARBON	3.9K 5% 1/4W
R022	1-249-414-11	CARBON	560 5% 1/4W	R162	1-249-433-11	CARBON	22K 5% 1/4W
R024	1-249-421-11	CARBON	2.2K 5% 1/4W	R163	1-249-433-11	CARBON	22K 5% 1/4W
R025	1-249-421-11	CARBON	2.2K 5% 1/4W	R164	1-249-433-11	CARBON	22K 5% 1/4W
R026	1-249-421-11	CARBON	2.2K 5% 1/4W	R165	1-249-433-11	CARBON	22K 5% 1/4W
R027	1-249-421-11	CARBON	2.2K 5% 1/4W	R166	1-249-429-11	CARBON	10K 5% 1/4W
R028	1-249-423-11	CARBON	3.3K 5% 1/4W	R167	1-247-903-00	CARBON	1M 5% 1/4W
R029	1-249-414-11	CARBON	560 5% 1/4W	R170	1-249-415-11	CARBON	680 5% 1/4W
R030	1-249-414-11	CARBON	560 5% 1/4W	R171	1-249-423-11	CARBON	3.3K 5% 1/4W
R032	1-249-414-11	CARBON	560 5% 1/4W	R172	1-249-434-11	CARBON	27K 5% 1/4W
R034	1-249-426-11	CARBON	5.6K 5% 1/4W	R174	1-247-889-00	CARBON	270K 5% 1/4W
R035	1-249-417-11	CARBON	1K 5% 1/4W	R175	1-249-441-11	CARBON	100K 5% 1/4W
R036	1-249-416-11	CARBON	820 5% 1/4W	R176	1-249-441-11	CARBON	100K 5% 1/4W
R037	1-249-416-11	CARBON	820 5% 1/4W	R180	1-249-426-11	CARBON	5.6K 5% 1/4W
R038	1-249-414-11	CARBON	560 5% 1/4W	R181	1-249-416-11	CARBON	820 5% 1/4W
R040	1-249-431-11	CARBON	15K 5% 1/4W	R182	1-249-415-11	CARBON	680 5% 1/4W
R044	1-249-414-11	CARBON	560 5% 1/4W	R185	1-247-725-11	CARBON	10K 5% 1/4W
R101	1-249-426-11	CARBON	5.6K 5% 1/4W	R201	1-249-405-11	CARBON	100 5% 1/4W
R102	1-249-417-11	CARBON	1K 5% 1/4W	R202	1-247-700-11	CARBON	100 5% 1/4W
R103	1-215-923-00	METAL OXIDE	10K 5% 3W F	R204	1-249-435-11	CARBON	33K 5% 1/4W
R104	1-247-721-11	CARBON	4.7K 5% 1/4W	R207	1-249-435-11	CARBON	33K 5% 1/4W
R105	1-249-437-11	CARBON	47K 5% 1/4W	R208	1-249-425-11	CARBON	4.7K 5% 1/4W
R106	1-249-433-11	CARBON	22K 5% 1/4W	R209	1-249-417-11	CARBON	1K 5% 1/4W
R108	1-249-425-11	CARBON	4.7K 5% 1/4W	R210	1-247-700-11	CARBON	100 5% 1/4W
R109	1-249-409-11	CARBON	220 5% 1/4W	R211	1-249-433-11	CARBON	22K 5% 1/4W
R113	1-249-417-11	CARBON	1K 5% 1/4W	R212	1-249-419-11	CARBON	1.5K 5% 1/4W
R115	1-249-421-11	CARBON	2.2K 5% 1/4W	R213	1-249-411-11	CARBON	330 5% 1/4W
R116	1-249-421-11	CARBON	2.2K 5% 1/4W	R214	1-249-411-11	CARBON	330 5% 1/4W
R117	1-249-421-11	CARBON	2.2K 5% 1/4W	R217	1-247-713-11	CARBON	1K 5% 1/4W
R118	1-249-433-11	CARBON	22K 5% 1/4W	R221	1-249-414-11	CARBON	560 5% 1/4W
R119	1-247-713-11	CARBON	1K 5% 1/4W	R229	1-249-411-11	CARBON	330 5% 1/4W
R120	1-249-437-11	CARBON	47K 5% 1/4W	R230	1-249-411-11	CARBON	330 5% 1/4W
R121	1-249-434-11	CARBON	27K 5% 1/4W	R231	1-247-700-11	CARBON	100 5% 1/4W
R124	1-249-417-11	CARBON	1K 5% 1/4W	R232	1-247-706-11	CARBON	330 5% 1/4W
R125	1-249-417-11	CARBON	1K 5% 1/4W	R233	1-249-411-11	CARBON	330 5% 1/4W
R126	1-249-429-11	CARBON	10K 5% 1/4W	R234	1-249-411-11	CARBON	330 5% 1/4W
R128	1-249-429-11	CARBON	10K 5% 1/4W	R240	1-249-425-11	CARBON	4.7K 5% 1/4W
R131	1-249-412-11	CARBON	390 5% 1/4W	R241	1-249-441-11	CARBON	100K 5% 1/4W
R132	1-249-412-11	CARBON	390 5% 1/4W	R250	1-249-411-11	CARBON	330 5% 1/4W
R133	1-249-429-11	CARBON	10K 5% 1/4W	R251	$\Delta$ 1-249-401-91	CARBON	47 5% 1/4W F
R134	1-247-708-11	CARBON	470 5% 1/4W	R252	1-249-430-11	CARBON	12K 5% 1/4W
R136	1-247-700-11	CARBON	100 5% 1/4W	R253	1-249-434-11	CARBON	27K 5% 1/4W
R137	1-249-441-11	CARBON	100K 5% 1/4W	R254	1-249-403-11	CARBON	68 5% 1/4W
R139	1-249-417-11	CARBON	1K 5% 1/4W	R290	1-249-410-11	CARBON	270 5% 1/4W F
R140	1-249-417-11	CARBON	1K 5% 1/4W	R291	1-249-430-11	CARBON	12K 5% 1/4W
R141	1-249-417-11	CARBON	1K 5% 1/4W	R292	$\Delta$ 1-249-401-91	CARBON	47 5% 1/4W F
R142	1-249-429-11	CARBON	10K 5% 1/4W	R293	1-249-434-11	CARBON	27K 5% 1/4W
R143	1-249-429-11	CARBON	10K 5% 1/4W	R301	1-215-472-00	METAL	130K 1% 1/6W
R145	1-249-414-11	CARBON	560 5% 1/4W	R302	1-249-437-11	CARBON	47K 5% 1/4W
R146	1-247-713-11	CARBON	1K 5% 1/4W	R304	1-247-889-00	CARBON	270K 5% 1/4W
R147	1-249-416-11	CARBON	820 5% 1/4W	R305	1-249-440-11	CARBON	82K 5% 1/4W
R148	1-249-432-11	CARBON	18K 5% 1/4W	R306	1-249-437-11	CARBON	47K 5% 1/4W
R149	1-249-423-11	CARBON	3.3K 5% 1/4W	R307	1-249-429-11	CARBON	10K 5% 1/4W
R150	1-249-437-11	CARBON	47K 5% 1/4W	R308	1-249-411-11	CARBON	330 5% 1/4W
R151	1-249-429-11	CARBON	10K 5% 1/4W	R309	1-249-411-11	CARBON	330 5% 1/4W
R152	1-249-433-11	CARBON	22K 5% 1/4W	R310	1-249-411-11	CARBON	330 5% 1/4W
R153	1-249-427-11	CARBON	6.8K 5% 1/4W	R315	1-249-417-11	CARBON	1K 5% 1/4W
R154	1-247-889-00	CARBON	270K 5% 1/4W	R316	1-247-706-11	CARBON	330 5% 1/4W
R155	1-249-439-11	CARBON	68K 5% 1/4W	R318	1-249-417-11	CARBON	1K 5% 1/4W
R156	1-249-424-11	CARBON	3.9K 5% 1/4W	R319	1-249-417-11	CARBON	1K 5% 1/4W
R157	1-249-409-11	CARBON	220 5% 1/4W	R320	1-249-417-11	CARBON	1K 5% 1/4W
R158	1-247-889-00	CARBON	270K 5% 1/4W	R323	1-249-427-11	CARBON	6.8K 5% 1/4W
R159	1-249-409-11	CARBON	220 5% 1/4W	R325	1-249-435-11	CARBON	33K 5% 1/4W
R160	1-249-439-11	CARBON	68K 5% 1/4W				

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

- The components identified by  $\Delta$  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

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- \* : Selected to yield optimum performance.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R328	1-249-414-11	CARBON	560 5% 1/4W	R532	1-249-438-11	CARBON	56K 5% 1/4W
R329	1-249-441-11	CARBON	100K 5% 1/4W	R533	1-249-417-11	CARBON	1K 5% 1/4W
R330	1-249-426-11	CARBON	5.6K 5% 1/4W	R534	1-249-410-11	CARBON	270 5% 1/4W
R333	1-249-429-11	CARBON	10K 5% 1/4W	R535	1-249-419-11	CARBON	1.5K 5% 1/4W F
R334	1-249-413-11	CARBON	470 5% 1/4W	R536	1-247-722-11	CARBON	5.6K 5% 1/4W
R335	1-247-721-11	CARBON	4.7K 5% 1/4W	R537	1-247-726-11	CARBON	33K 5% 1/4W
R340	1-249-427-11	CARBON	6.8K 5% 1/4W	R539	1-215-373-31	METAL	10 1% 1/6W
R341	1-247-717-11	CARBON	2.2K 5% 1/4W	R540	1-249-405-11	CARBON	100 5% 1/4W
R342	1-247-717-11	CARBON	2.2K 5% 1/4W	R541	1-249-429-11	CARBON	10K 5% 1/4W
R344	1-215-894-11	METAL OXIDE	2.2K 5% 2W F	R542	1-249-426-11	CARBON	5.6K 5% 1/4W
R348	1-247-717-11	CARBON	2.2K 5% 1/4W	R543	1-249-434-11	CARBON	27K 5% 1/4W
R349	1-249-417-11	CARBON	1K 5% 1/4W	R544	1-249-429-11	CARBON	10K 5% 1/4W
R350	1-249-437-11	CARBON	47K 5% 1/4W	R545	1-247-754-11	CARBON	1.5K 5% 1/2W
R351	1-247-903-00	CARBON	1M 5% 1/4W	R546	1-249-415-11	CARBON	680 5% 1/4W F
R352	1-247-901-11	CARBON	820K 5% 1/4W	R547	1-249-429-11	CARBON	10K 5% 1/4W
R353	1-249-429-11	CARBON	10K 5% 1/4W	R548	1-249-437-11	CARBON	47K 5% 1/4W
R361	1-249-429-11	CARBON	10K 5% 1/4W	R549	$\Delta$ 1-249-415-91	CARBON	680 5% 1/4W F
R362	$\Delta$ 1-216-470-51	METAL OXIDE	18 5% 3W F	R550	1-249-440-11	CARBON	82K 5% 1/4W
R364	1-249-437-11	CARBON	47K 5% 1/4W	*R551	1-249-437-11	CARBON	47K 5% 1/4W
R366	1-247-713-11	CARBON	1K 5% 1/4W	R552	1-247-713-11	CARBON	1K 5% 1/4W F
R368	1-249-417-11	CARBON	1K 5% 1/4W	R553	1-249-413-11	CARBON	470 5% 1/4W
R369	1-249-417-11	CARBON	1K 5% 1/4W	R554	1-249-429-11	CARBON	10K 5% 1/4W
R371	1-249-429-11	CARBON	10K 5% 1/4W	*R555	1-249-413-11	CARBON	470 5% 1/4W
R375	1-249-434-11	CARBON	27K 5% 1/4W	R556	1-216-371-00	METAL OXIDE	1.5 5% 2W F
R378	1-215-894-11	METAL OXIDE	2.2K 5% 2W F	R557	1-259-871-15	CARBON	6.8M 5% 1/4W
R379	1-215-894-11	METAL OXIDE	2.2K 5% 2W F	R558	1-249-407-11	CARBON	150 5% 1/4W
R380	1-249-419-11	CARBON	1.5K 5% 1/4W F	R559	1-249-417-11	CARBON	1K 5% 1/4W
*R381	$\Delta$ 1-202-830-00	SOLID	10K 10% 1/2W	R560	1-247-719-11	CARBON	3.3K 5% 1/4W
R385	1-249-436-11	CARBON	39K 5% 1/4W	R561	1-247-717-11	CARBON	2.2K 5% 1/4W
R386	1-249-439-11	CARBON	68K 5% 1/4W	R562	1-215-880-00	METAL OXIDE	10 5% 2W F
R387	1-249-462-11	CARBON	22K 5% 1/4W	R563	1-249-436-11	CARBON	39K 5% 1/4W
R389	1-249-414-11	CARBON	560 5% 1/4W	R564	1-249-433-11	CARBON	22K 5% 1/4W
R390	1-247-721-11	CARBON	4.7K 5% 1/4W	R565	1-249-441-11	CARBON	100K 5% 1/4W
R391	1-249-441-11	CARBON	100K 5% 1/4W	R566	1-247-895-00	CARBON	470K 5% 1/4W
R392	1-249-429-11	CARBON	10K 5% 1/4W	R567	$\Delta$ 1-216-373-51	METAL OXIDE	2.2 5% 2W F
R501	1-216-458-11	METAL OXIDE	1.8K 5% 2W F	R568	$\Delta$ 1-249-448-51	CARBON	1.2 5% 1/4W F
R502	1-216-458-11	METAL OXIDE	1.8K 5% 2W F	R569	1-249-423-11	CARBON	3.3K 5% 1/4W
R503	1-249-405-11	CARBON	100 5% 1/4W	R570	$\Delta$ 1-215-918-51	METAL OXIDE	1.5K 5% 3W F
R504	1-249-414-11	CARBON	560 5% 1/4W	R571	1-247-700-11	CARBON	100 5% 1/4W
R505	1-215-472-00	METAL	130K 1% 1/6W	R572	1-249-423-11	CARBON	3.3K 5% 1/4W
R506	1-247-702-11	CARBON	150 5% 1/4W	R573	1-247-722-11	CARBON	5.6K 5% 1/4W F
R507	1-249-426-11	CARBON	5.6K 5% 1/4W	R574	1-216-345-11	METAL OXIDE	0.47 5% 1W F
R508	1-249-437-11	CARBON	47K 5% 1/4W	R575	1-249-434-11	CARBON	27K 5% 1/4W
R509	1-249-434-11	CARBON	27K 5% 1/4W	R576	1-249-389-11	CARBON	4.7 5% 1/4W F
R510	1-249-422-11	CARBON	2.7K 5% 1/4W	R577	1-215-860-11	METAL OXIDE	33 5% 1W F
R512	1-249-411-11	CARBON	330 5% 1/4W	R578	$\Delta$ 1-215-880-91	METAL OXIDE	10 5% 2W F
R513	1-215-472-00	METAL	130K 1% 1/6W	R579	$\Delta$ 1-249-415-91	CARBON	680 5% 1/4W F
R514	1-215-459-00	METAL	39K 1% 1/6W	R580	$\Delta$ 1-215-861-91	METAL OXIDE	47 5% 1W F
R515	1-215-441-00	METAL	6.8K 1% 1/6W	R581	1-247-708-11	CARBON	470 5% 1/4W F
R516	1-249-428-11	CARBON	8.2K 5% 1/4W	R582	1-216-450-00	METAL OXIDE	82 5% 2W F
R517	1-247-713-11	CARBON	1K 5% 1/4W	R583	1-216-450-00	METAL OXIDE	82 5% 2W F
R519	1-249-424-11	CARBON	3.9K 5% 1/4W	R584	1-216-458-11	METAL OXIDE	1.8K 5% 2W F
R521	1-247-887-00	CARBON	220K 5% 1/4W	R585	1-216-458-11	METAL OXIDE	1.8K 5% 2W F
R522	1-249-421-11	CARBON	2.2K 5% 1/4W	R586	1-216-429-00	METAL OXIDE	270 5% 1W F
R523	1-249-417-11	CARBON	1K 5% 1/4W	R587	$\Delta$ 1-216-434-81	METAL OXIDE	1.8K 5% 1W F
R524	1-247-713-11	CARBON	1K 5% 1/4W	R588	1-247-696-11	CARBON	47 5% 1/4W
R525	1-249-419-11	CARBON	1.5K 5% 1/4W	R589	1-249-441-11	CARBON	100K 5% 1/4W
R526	1-249-431-11	CARBON	15K 5% 1/4W	R591	$\Delta$ 1-216-345-91	METAL OXIDE	0.47 5% 1W F
R527	1-249-417-11	CARBON	1K 5% 1/4W	R592	$\Delta$ 1-249-448-51	CARBON	1.2 5% 1/4W F
R528	1-249-429-11	CARBON	10K 5% 1/4W	R593	1-216-374-00	METAL OXIDE	2.7 5% 2W F
R529	1-249-423-11	CARBON	3.3K 5% 1/4W	R598	$\Delta$ 1-249-389-91	CARBON	4.7 5% 1/4W F
R530	1-249-433-11	CARBON	22K 5% 1/4W	R599	1-249-419-11	CARBON	1.5K 5% 1/4W
R531	1-246-535-00	CARBON	390K 5% 1/4W	R601	1-202-726-00	SOLID	3.9M 10% 1/2W

A

M1

M2

The components identified by shading and mark **Δ** are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une trame et une marque **Δ** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R602	<b>Δ</b> 1-205-741-11	WIREWOUND	1.8 5% 10W F
R605	<b>Δ</b> 1-205-702-11	WIREWOUND	220 5% 20W F
R606	1-247-889-00	CARBON	270K 5% 1/4W
R610	<b>Δ</b> 1-217-224-11	WIREWOUND	100 10% 2W F
R611	1-215-872-11	METAL OXIDE	3.3K 5% 1W F
R613	1-249-437-11	CARBON	47K 5% 1/4W
R614	1-249-425-11	CARBON	4.7K 5% 1/4W
R615	<b>Δ</b> 1-216-463-91	METAL OXIDE	12K 5% 2W F
R616	<b>Δ</b> 1-247-719-51	CARBON	3.3K 5% 1/4W F
R617	<b>Δ</b> 1-249-401-91	CARBON	47 5% 1/4W F
R618	1-247-895-00	CARBON	470K 5% 1/4W
R619	1-216-482-11	METAL OXIDE	1.8K 5% 3W F
R620	1-216-482-11	METAL OXIDE	1.8K 5% 3W F
R621	1-216-482-11	METAL OXIDE	1.8K 5% 3W F
R650	<b>Δ</b> 1-205-702-11	WIREWOUND	220 5% 20W F
<VARIABLE RESISTOR>			
RV201	1-238-015-11	RES, ADJ, CARBON 4.7K	
RV291	1-238-010-11	RES, ADJ, CARBON 330	
RV307	1-238-011-11	RES, ADJ, CARBON 470	
RV501	1-228-728-00	RES, ADJ, CERAMIC CARBON 100K	
RV502	1-238-020-11	RES, ADJ, CARBON 100K	
RV504	1-238-017-11	RES, ADJ, CARBON 22K	
RV505	1-238-017-11	RES, ADJ, CARBON 22K	
RV506	1-238-019-11	RES, ADJ, CARBON 47K	
RV507	1-238-010-11	RES, ADJ, CARBON 330	
RV508	1-238-012-11	RES, ADJ, CARBON 1K	
<RELAY>			
RY601A	<b>Δ</b> 1-515-573-12	RELAY, POWER	
<SWITCH>			
S501	1-554-186-00	SWITCH, LEVER	
<SPARK GAP>			
SG501	1-519-422-11	GAP, SPARK	
<TRANSFORMER>			
T101	1-404-538-11	COIL	
T201	<b>Δ</b> 1-427-462-11	TRANSFORMER, SOUND OUTPUT	
T299	<b>Δ</b> 1-427-462-11	TRANSFORMER, SOUND OUTPUT	
T501	1-437-079-00	TRANSFORMER, HORIZONTAL DRIVE	
T502	<b>Δ</b> 1-421-794-11	TRANSFORMER, FERRITE (PMT)	
T599	<b>Δ</b> 1-421-857-11	TRANSFORMER, FERRITE	
T601	<b>Δ</b> 1-421-357-31	TRANSFORMER, LINE FILTER	
<THERMISTOR>			
THP601A	<b>Δ</b> 1-808-081-13	THERMISTOR, POSITIVE	
<CRYSTAL>			
X101	1-567-192-11	OSCILLATOR, CERAMIC	
X301	1-567-505-11	OSCILLATOR, CRYSTAL	

REF.NO.	PART NO.	DESCRIPTION	REMARK
*1-624-988-11	M1 BOARD	*****	
*1-566-049-11	PIN, CONNECTOR 10P		
*1-566-057-11	PIN, CONNECTOR 5P		
*4-374-987-01	GUIDE, LIGHT		
*4-381-686-01	BRACKET (B), LIGHT GUIDE		
<DIODE>			
D801	8-719-311-89	DIODE SEL1222R-C	
*4-368-519-00	HOLDER (3 GANG), LED; D801		
D802	8-719-311-89	DIODE SEL1222R-C	
*4-368-519-00	HOLDER (3 GANG), LED; D802		
D803	8-719-311-89	DIODE SEL1222R-C	
*4-368-519-00	HOLDER (3 GANG), LED; D803		
D804	8-719-311-89	DIODE SEL1222R-C	
<IC>			
IC801	8-741-148-33	IC SBX1483-59	
<SWITCH>			
S801	1-554-937-11	SWITCH, KEY BOARD	
S802	1-554-937-11	SWITCH, KEY BOARD	
S803	1-554-937-11	SWITCH, KEY BOARD	
S804	1-554-937-11	SWITCH, KEY BOARD	
S805	1-554-937-11	SWITCH, KEY BOARD	
S806	1-554-937-11	SWITCH, KEY BOARD	
S808	<b>Δ</b> 1-554-937-11	SWITCH, KEY BOARD (POWER)	
*****			
*1-624-989-11	M2 BOARD	*****	
*1-566-058-11	PIN, CONNECTOR 6P		
*1-566-061-11	PIN, CONNECTOR 9P		
<DIODE>			
D804	8-719-911-19	DIODE 1SS119	
<RESISTOR>			
R801	1-249-429-11	CARBON	10K 5% 1/4W
R802	1-249-430-11	CARBON	12K 5% 1/4W
R803	1-249-428-11	CARBON	8.2K 5% 1/4W
<VARIABLE RESISTOR>			
RV801	1-237-999-11	RES, VAR, CARBON 20KX4	
RV802	1-237-999-11	RES, VAR, CARBON 20KX4	
RV803	1-237-999-11	RES, VAR, CARBON 20KX4	
RV804	1-237-999-11	RES, VAR, CARBON 20KX4	
<SWITCH>			
S809	1-554-303-21	SWITCH, KEY BOARD	
S810	1-554-303-21	SWITCH, KEY BOARD	
S811	1-554-303-21	SWITCH, KEY BOARD	
S812	1-571-399-11	SWITCH, ROTARY	
S813	1-571-399-11	SWITCH, ROTARY	
S814	1-571-399-11	SWITCH, ROTARY	
*****			

Les composants identifiés par  
une trame et une marque  $\Delta$   
sont critiques pour la sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

The components identified by  
shading and mark  $\Delta$  are critical  
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specified.

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C

U

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1330-838-A	C BOARD, COMPLETE *****	
	1-526-798-51	SOCKET, PICTURE TUBE	
	*4-379-160-01	COVER (REAR LID), CV	
	*4-379-167-01	COVER (MAIN), CV	
	<CONNECTOR>		
C1	*1-506-371-00	PIN, CONNECTOR 2P	
C2	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
C3	*1-566-058-11	PIN, CONNECTOR 6P	
	<CAPACITOR>		
C701	1-136-601-11	FILM 0.01MF 10% 630V	
C702	1-162-115-00	CERAMIC 330PF 10% 2KV	
C704	1-124-915-11	ELECT 10MF 20% 63V	
C705	1-102-116-00	CERAMIC 680PF 10% 50V	
C706	1-102-116-00	CERAMIC 680PF 10% 50V	
C707	1-102-116-00	CERAMIC 680PF 10% 50V	
C708	1-102-110-00	CERAMIC 220PF 10% 50V	
C709	1-102-110-00	CERAMIC 220PF 10% 50V	
C710	1-102-110-00	CERAMIC 220PF 10% 50V	
C711	1-101-004-00	CERAMIC 0.01MF 50V	
C722	1-162-622-11	CERAMIC 330PF 10% 6.3KV	
	<DIODE>		
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-911-19	DIODE 1SS119	
	<COIL>		
L701	1-408-417-00	INDUCTOR 47UH	
	<TRANSISTOR>		
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q702	8-729-326-11	TRANSISTOR 2SC2611	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q704	8-729-326-11	TRANSISTOR 2SC2611	
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q706	8-729-326-11	TRANSISTOR 2SC2611	
	<RESISTOR>		
R701	1-202-838-00	SOLID 100K 10% 1/2W	
R702	1-216-397-11	METAL OXIDE 4.7 5% 3W	F
R703	1-202-842-11	SOLID 220K 10% 1/2W	
R704	1-202-846-00	SOLID 470K 10% 1/2W	
R705	1-202-837-00	SOLID 82K 10% 1/2W	
R706	1-202-549-00	SOLID 100 10% 1/2W	
R707	1-202-842-11	SOLID 220K 10% 1/2W	
R708	1-202-824-00	SOLID 3.3K 10% 1/2W	
R709	1-202-824-00	SOLID 3.3K 10% 1/2W	
R710	1-247-700-11	SOLID 100 5% 1/4W	
R710	1-247-700-11	SOLID 100 10% 1/4W	
R711	1-249-409-11	CARBON 220 5% 1/4W	
R712	1-249-409-11	CARBON 220 5% 1/4W	
R713	1-202-824-00	SOLID 3.3K 10% 1/2W	
R714	1-249-421-11	CARBON 2.2K 5% 1/4W	
R715	1-249-422-11	CARBON 2.7K 5% 1/4W	
R716	1-249-414-11	CARBON 560 5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R718	1-249-405-11	CARBON 100 5% 1/4W	
R719	1-249-418-11	CARBON 1.2K 5% 1/4W	
R720	1-249-413-11	CARBON 470 5% 1/4W	
R722	$\Delta$ 1-206-692-61	METAL OXIDE 15K 5% 2W	F
R723	1-249-414-11	CARBON 560 5% 1/4W	
R725	1-249-422-11	CARBON 2.7K 5% 1/4W	
R726	1-249-405-11	CARBON 100 5% 1/4W	
R727	1-249-418-11	CARBON 1.2K 5% 1/4W	
R728	1-249-413-11	CARBON 470 5% 1/4W	
R729	1-249-409-11	CARBON 220 5% 1/4W	
R730	$\Delta$ 1-206-692-61	METAL OXIDE 15K 5% 2W	F
R732	1-249-411-11	CARBON 330 5% 1/4W	
R733	1-249-422-11	CARBON 2.7K 5% 1/4W	
R734	1-249-425-11	CARBON 4.7K 5% 1/4W	
R735	1-249-405-11	CARBON 100 5% 1/4W	
R737	$\Delta$ 1-206-692-61	METAL OXIDE 15K 5% 2W	F
R738	1-202-848-00	SOLID 680K 10% 1/2W	
R739	1-202-838-00	SOLID 100K 10% 1/2W	
R740	1-202-842-11	SOLID 220K 10% 1/2W	
	<VARIABLE RESISTOR>		
RV701	$\Delta$ 1-230-619-11	RES, ADJ, METAL GLAZE 110W	
RV702	1-228-992-11	RES, ADJ, CARBON 3.3K	
RV703	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV704	1-228-992-11	RES, ADJ, CARBON 3.3K	
RV705	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV706	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV707	1-228-995-00	RES, ADJ, CARBON 22K	
RV708	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
*****			
	*A-1394-132-A	U BOARD, COMPLETE *****	
	<CAPACITOR>		
C1402	1-124-604-00	ELECT 330MF 20% 10V	
C1405	1-124-119-00	ELECT 330MF 20% 16V	
C1406	1-101-004-00	CERAMIC 0.01MF 50V	
C1407	1-126-101-11	ELECT 100MF 20% 16V	
C1408	1-101-004-00	CERAMIC 0.01MF 50V	
C1409	1-126-101-11	ELECT 100MF 20% 16V	
C1423	1-106-375-12	MYLAR 0.022MF 10% 100V	
C1424	1-106-363-00	MYLAR 0.0068MF 10% 100V	
C1426	1-106-375-12	MYLAR 0.022MF 10% 100V	
C1427	1-106-363-00	MYLAR 0.0068MF 10% 100V	
C1430	$\Delta$ 1-161-742-51	CERAMIC 0.0022MF 20% 400V	
C1431	1-124-499-11	ELECT 1MF 20% 50V	
C1432	1-124-499-11	ELECT 1MF 20% 50V	
C1436	1-123-875-11	ELECT 10MF 20% 50V	
C1437	1-123-875-11	ELECT 10MF 20% 50V	
C1438	1-123-875-11	ELECT 10MF 20% 50V	
C1439	1-123-875-11	ELECT 10MF 20% 50V	
C1442	1-126-233-11	ELECT 22MF 20% 50V	
C1446	1-123-875-11	ELECT 10MF 20% 50V	
C1447	1-123-875-11	ELECT 10MF 20% 50V	
C1449	1-126-101-11	ELECT 100MF 20% 16V	
C1450	1-124-499-11	ELECT 1MF 20% 50V	
C1451	1-124-499-11	ELECT 1MF 20% 50V	
C1452	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C1453	1-102-125-00	CERAMIC 0.0047MF 10% 50V	
C1454	1-126-103-11	ELECT 470MF 20% 16V	

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C1467	1-124-768-11	ELECT 4.7MF	20% 50V	R1462	1-249-438-11	CARBON 56K 5%	1/4W
C1468	1-124-768-11	ELECT 4.7MF	20% 50V	R1463	1-249-431-11	CARBON 15K 5%	1/4W
C1469	1-123-875-11	ELECT 10MF	20% 50V	R1464	1-249-431-11	CARBON 15K 5%	1/4W
C1470	1-124-499-11	ELECT 1MF	20% 50V	R1471	1-247-881-00	CARBON 120K 5%	1/4W
C1471	1-124-499-11	ELECT 1MF	20% 50V	R1472	1-247-881-00	CARBON 120K 5%	1/4W
C1472	1-123-875-11	ELECT 10MF	20% 50V	R1473	1-249-441-11	CARBON 100K 5%	1/4W
C1473	1-123-875-11	ELECT 10MF	20% 50V	R1474	1-249-441-11	CARBON 100K 5%	1/4W
C1474	1-123-875-11	ELECT 10MF	20% 50V	R1475	1-249-417-11	CARBON 1K 5%	1/4W
C1475	1-123-875-11	ELECT 10MF	20% 50V	R1477	1-249-405-11	CARBON 100 5%	1/4W F
C1476	1-124-499-11	ELECT 1MF	20% 50V	R1479	1-249-434-11	CARBON 27K 5%	1/4W
C1477	1-124-499-11	ELECT 1MF	20% 50V	R1480	1-249-463-11	CARBON 27K 5%	1/4W
C1480	1-123-875-11	ELECT 10MF	20% 50V	R1486	1-249-427-11	CARBON 6.8K 5%	1/4W
C1481	1-123-875-11	ELECT 10MF	20% 50V	R1487	1-249-433-11	CARBON 22K 5%	1/4W
<DIODE>				R1489	1-249-427-11	CARBON 6.8K 5%	1/4W
D1401	8-719-109-92	DIODE RD6.2ES-B1		R1490	1-249-433-11	CARBON 22K 5%	1/4W
D1430	8-719-911-19	DIODE 1SS119		R1496	1-247-700-11	CARBON 100 5%	1/4W
<IC>				R1497	1-249-441-11	CARBON 100K 5%	1/4W
IC1401A1	235-783-11	INSULATED MODULE, VIDEO(1VM-1)		R1500	1-249-417-11	CARBON 1K 5%	1/4W
IC1402A1	235-784-12	INSULATED MODULE, AUDIO(1AM-1)		R1501	1-249-417-11	CARBON 1K 5%	1/4W
IC1403A1	235-784-12	INSULATED MODULE, AUDIO(1AM-1)		R1503	1-249-463-11	CARBON 27K 5%	1/4W
IC1404A1	235-784-12	INSULATED MODULE, AUDIO(1AM-1)		R1504	1-249-463-11	CARBON 27K 5%	1/4W
IC1405A1	235-784-12	INSULATED MODULE, AUDIO(1AM-1)		R1505A1	249-391-91	CARBON 6.8 5%	1/4W F
IC1407	8-759-000-49	IC MC14066BCP		R1506A1	249-391-91	CARBON 6.8 5%	1/4W F
IC1410	8-759-983-38	IC MB3110APS-G-SNY		R1507	1-247-885-00	CARBON 180K 5%	1/4W
<JACK>				R1508A1	249-391-91	CARBON 6.8 5%	1/4W F
J1401	1-563-303-21	JACK BLOCK, PIN 3P		R1509A1	249-391-91	CARBON 6.8 5%	1/4W F
J1403	1-563-302-11	JACK BLOCK, PIN 2P		R1510	1-247-713-11	CARBON 1K 5%	1/4W
<TRANSISTOR>				R1511	1-249-469-11	CARBON 100K 5%	1/4W
Q1439	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1512	1-247-713-11	CARBON 1K 5%	1/4W
Q1440	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1513	1-249-469-11	CARBON 100K 5%	1/4W
Q1441	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1514	1-249-435-11	CARBON 33K 5%	1/4W
Q1442	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1515	1-249-435-11	CARBON 33K 5%	1/4W
Q1443	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1516	1-249-405-11	CARBON 100 5%	1/4W
Q1444	8-729-900-89	TRANSISTOR DTC144BS		R1517	1-249-405-11	CARBON 100 5%	1/4W
Q1445	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1518	1-249-434-11	CARBON 27K 5%	1/4W
<RESISTOR>				R1519	1-249-469-11	CARBON 100K 5%	1/4W
R1403	1-247-699-11	CARBON 82 5%	1/4W	R1520	1-249-469-11	CARBON 100K 5%	1/4W
R1409A1	249-391-91	CARBON 6.8 5%	1/4W F	R1521	1-249-441-11	CARBON 100K 5%	1/4W
R1411A1	249-391-91	CARBON 6.8 5%	1/4W F	R1522	1-249-441-11	CARBON 100K 5%	1/4W
R1419	1-247-700-11	CARBON 100 5%	1/4W	R1527	1-249-425-11	CARBON 4.7K 5%	1/4W
R1430A1	1-202-726-91	SOLID 3.9M 10%	1/2W	R1528	1-249-441-11	CARBON 100K 5%	1/4W
R1436	1-249-466-11	CARBON 56K 5%	1/4W	R1531	1-249-465-11	CARBON 47K 5%	1/4W
R1438	1-249-466-11	CARBON 56K 5%	1/4W	R1532	1-249-437-11	CARBON 47K 5%	1/4W
R1447A1	249-391-91	CARBON 6.8 5%	1/4W F	R1534	1-249-428-11	CARBON 8.2K 5%	1/4W
R1448A1	249-391-91	CARBON 6.8 5%	1/4W F	R1535	1-249-417-11	CARBON 1K 5%	1/4W
R1449A1	249-391-91	CARBON 6.8 5%	1/4W F	R1536	1-249-405-11	CARBON 100 5%	1/4W
R1450A1	249-391-91	CARBON 6.8 5%	1/4W F	R1546	1-249-405-11	CARBON 100 5%	1/4W
R1455	1-249-405-11	CARBON 100 5%	1/4W	R1547	1-247-700-11	CARBON 100 5%	1/4W
R1456	1-247-700-11	CARBON 100 5%	1/4W	<CONNECTOR>			
R1457	1-247-700-11	CARBON 100 5%	1/4W	U2	*1-566-055-11	PIN, CONNECTOR 3P	
R1458	1-249-405-11	CARBON 100 5%	1/4W	U3	*1-566-057-11	PIN, CONNECTOR 5P	
R1459	1-249-466-11	CARBON 56K 5%	1/4W	U4	*1-566-060-11	PIN, CONNECTOR 8P	
R1460	1-249-466-11	CARBON 56K 5%	1/4W	U5	*1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P	
R1461	1-249-466-11	CARBON 56K 5%	1/4W	*****			
<MISCELLANEOUS>				*****			
				A 1-230-940-31 RESISTOR ASSY, HIGH-VOLTAGE			
				A 1-426-350-11 COIL, DEMAGNETIZATION			
				A 1-451-275-11 DEFLECTION YOKE (Y28PFA)			
				1-452-032-00 MAGNET, DISK; 10MM $\phi$			



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REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	
	$\Delta$ 1-536-591-61	BLOCK, ANTENNA (USA ONLY)	
	$\Delta$ 1-536-902-21	BLOCK, ANTENNA (CND ONLY)	
	$\Delta$ 1-559-396-11	CORD, POWER (USA ONLY)	
SP901	1-503-918-11	SPEAKER	
SP902	1-503-918-11	SPEAKER	
T504	$\Delta$ 1-439-372-13	TRANSFORMER ASSY, FLYBACK	
TU101A	$\Delta$ 1-463-771-11	TUNER, ET (BTP-201A)	
Y901	$\Delta$ 8-737-753-05	PICTURE TUBE (A68JMT50X)	

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ACCESSORIES AND PACKING MATERIALS  
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PART NO.	DESCRIPTION	REMARK
A-1470-824-A	COMMANDER ASSY (RM-757)	
1-513-379-00	CONVERTER (BAC-25) (CND ONLY)	
1-562-443-11	CONNECTOR, ANTENNA (USA ONLY)	
*4-384-027-01	BAG, PROTECTION	
*4-388-939-02	CUSHION (UPPER) (ASSY)	
*4-388-940-01	CUSHION (LOWER) (ASSY)	
*4-388-965-02	INDIVIDUAL CARTON	
4-482-537-41	MANUAL, INSTRUCTION	
4-482-537-51	MANUAL, INSTRUCTION (CND ONLY)	